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DUBLIN JOURNAL

OF

MEDICAL SCIENCE

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MEDICAL SCIENCE.

JULY 1, 1909.

PART I.

ORIGINAL COMMUNICATIONS.

ART. I.—*Post-Operative Tetanus.*[a] By LEVESON GOWER GUNN, M.D., F.R.C.S.I.; Surgeon to the Adelaide Hospital, Dublin.

SINCE I began work at the Adelaide Hospital over 20,000 patients have been admitted to the wards, and over 50,000 accident cases have been attended to in the extern department. Amongst this large number only three patients suffering from tetanus have been treated. In some of the other hospitals traumatic tetanus is more frequently seen, but still it is a rare disease in Dublin. Post-operative tetanus has become so uncommon during the past two decades that, to me, as to most other surgeons, it had ceased to be regarded as a possible complication after operation. I believed that the introduction of antiseptics had rendered post-operative tetanus impossible. Last summer this belief was shattered by the outbreak of tetanus after operation in a private hospital where the strictest aseptic methods were being practised, and during a period when uniform asepsis was being obtained in the surgical cases. I here wish to mention my

[a] Read before the Section of Surgery of the Royal Academy of Medicine in Ireland, on Friday, May 7, 1909.

indebtedness to the surgeons whose patients were infected for allowing me to bring the cases collectively before you. None of the cases were my own. Three of the patients I saw, one I did not. I assisted at and took the keenest interest in all the investigations connected with this outbreak. A few words first on the bacteriology of tetanus.

The bacillus was found first by Nicolaier in the year 1884. It was not until 1889 that Kitasato obtained, after many difficulties, a pure culture of the organism. Dr. Bullock believes that almost all the pure cultures of the bacillus in existence to-day are the direct descendants of Kitasato's original culture. Whether this view is correct or not it evidently is a matter of extreme difficulty to separate the tetanus bacillus from other organisms with which it is so often mixed.

Tetanus is commonly found in the superficial layers of the soil, especially common in garden soil. Out of fifty samples of soil taken at haphazard from various parts of England, tetanus was found in twenty-seven. It can live and thrive in the intestine of the horse, is commonly found in horse manure, much less frequently in cow's, and rarely in sheep. Tetanus readily infects the horse, the rabbit, the guinea-pig, and the white mouse; fortunately it seems to have very feeble powers of infecting man, nor does it easily grow in the tissues of either the cow or the sheep. Tetanus is an anaerobe, but not strictly so; it has been found growing in the lungs, where it must have been exposed to the air; it can grow in water; exposure to the sun's rays retards, if it does not actually stop, the growth of this organism.

Like many other forms of vegetable life, tetanus forms spores only when growing under unfavourable conditions—that is, such conditions as are likely to end in the death of the bacillus. Under these circumstances the spore, with its greater resisting powers, is formed. The spores are not affected by a temperature of 80° C., but are said to die after five minutes exposure to steam at 100° C. Their resistance to antiseptics is marked—1-20 carbolic acid takes 15 hours to destroy them, 1-1,000 corrosive sublimate requires

8 hours. In the dry state, especially in the dark, even if exposed to the air, the spores can live for many months.

The tetanus bacillus forms an intensely poisonous albumin; the injection of ·000,005 of a gram is fatal to a mouse. The toxalbumin is destroyed by a temperature of 55° C., or by exposure to the sun's rays for from eight to twelve hours. Water has no effect on it. If these toxins are removed by thorough washing, an active emulsion of tetanus may be injected into a susceptible animal, and no harm either immediate or late will follow. If, however, lactic acid be previously injected, causing local necrosis, then acute tetanus will follow the injection of the emulsion. This is a point of great importance, proving, as it does, that tetanus cannot grow in the uninjured tissues of a susceptible animal, and while we have no proof that this applies to man the frequency with which tetanus is associated with a sloughing wound makes it probable that tetanus cannot grow in uninjured human tissues either.

Tetanus that has been inoculated in man or animal remains very local. In one or two cases it has been found in neighbouring lymphatic glands; it has also been found in the blood, but never, I think, in any other parts of the body.

The tetanus toxins spread along the nerve trunks; the antitoxins, on the other hand, are absorbed by the blood-vessels. This has been proved in the following way:—A solution of toxin is mixed with antitoxin until the solution becomes neutral—that is, it produces no effect on the animal inoculated. If, now, an injection of adrenalin is made into the animal's limb, constricting for a time the blood-vessels, and the mixture is again injected, the antitoxins fail to be absorbed by the blood-vessels, but the toxins are, and the animal falls into tetany.

The most careful *post-mortem* examinations in cases dying from tetanus have revealed little that is pathological, the only marked change being a general shrinking of the processes of the nerve cells. This has been found fairly constantly in such cases. Similar changes have been found after severe diphtheria infection.

The toxalbumin of tetanus is eliminated mainly by the urine. This fact is said to be of assistance in making an early diagnosis in a doubtful case, a small quantity of such urine producing tetany if injected into a white mouse. My own attempts to prove this have, however, failed to do so.

It is important that you should bear these facts about the tetanus bacillus in your minds as we go on to consider the outbreak of tetanus and the steps taken to check it.

The actual outbreak consisted of two certain cases, one almost certain case and one very doubtful case. This last was the first to occur. In October, 1907, a lady was admitted suffering from a bad carcinoma of the rectum; she was a neurotic woman, and at the time in a very poor state of health. The day before operation the patient was being prepared in the usual way, when suddenly she got a convulsive attack, and became unconscious for a few minutes. On her recovery, as she seemed very weak, the operation was postponed for twenty-four hours. This attack was looked upon as possibly hysterical. A trans-sacral excision of the rectum was done in the usual way, the patient taking her anæsthetic and bearing the operation well. Apart from her feeble condition, which gave reason for some anxiety, her case presented no special features of interest until eight days had elapsed. On the morning of the eighth day she complained that she was unable to open her mouth, and, at the same time, she had some difficulty in swallowing. She had no retraction of the head or even stiffness of the neck. By the evening she was worse. The teeth could now only separate about half an inch. At times the spasm relaxed, and she could then open her mouth almost to its full extent. The following day the trismus remained the same, but she was evidently much weaker. Towards evening a convulsive attack occurred, described by her nurse as similar to the attack the day before the operation. In this convulsion she died. The trismus in this case had at once aroused the suspicion that tetanus had occurred as a complication. The discharge from the wound was carefully examined, but failed to show anything resembling tetanus. The remains of the

catgut used on the case was tested, but found sterile. As it was most important to settle the diagnosis, a complete *post-mortem* was made by Prof. Scott, who found several small but definite hæmorrhages in the pons; smears from the wound showed no appearance of tetanus; attempts at cultivation were also negative. While this investigation was being carried out the room was disinfected. The nurses who had come in contact with the case were not allowed to attend other patients, and all that remained of the stock of catgut ligatures was destroyed. Prof. Scott's report of the pontine hæmorrhages, combined with the failure to find the tetanus bacillus, relieved our minds. From knowledge since gained I look on the failure to find the bacillus of almost no importance, still I very much doubt if this was a case of tetanus at all.

For nine months work went on without any hitch; then, at the end of July, a patient was operated on for double pyosalpinx. The removal was difficult, as both tubes were septic. Six days after operation slight trismus occurred. There was no difficulty in swallowing. By evening the neck muscles were involved, and the head was held stiffly, though not retracted. No general spasms occurred, but the lady became much weaker, fever increased, and on the following day, the eighth after operation, she died rather suddenly. This case, I have no doubt, was one of true tetanus, killing the patient before the general spasms had time to develop. There was here no hysterical element, and, though the case was all along septic, yet it seemed to be going on favourably until the onset of the trismus. After this occurred she became rapidly worse. The trismus was more marked, and, unlike Case I., once the jaw became stiff it remained so; the rigidity of the neck muscles was also typical.

Suspicion was at once aroused that this was a case of tetanus, and all who had cases in the house waiting for operation were informed of our suspicions, and the operations were postponed. Prof. Scott's assistance was again obtained, and a full *post-mortem* examination was made. Streptococci were found in the wound and in the pelvis. At my suggestion

a sterilised hypodermic syringe was passed into each parotid gland, and a drop or two of fluid withdrawn for examination. From the right parotid a free growth of streptococci occurred.

The most careful examination for tetanus failed to reveal any sign of the bacillus either in the patient or in the catgut. We were thus left in this uncertain position—no positive evidence of tetanus, but definite evidence of general septicæmia, with local infection in a region that might cause trismus.

Just one month later our doubts were finally settled by the occurrence of tetanus after an operation in such a typical way that no skill was required to make the diagnosis nor sentiment to realise the tragic element in the case.

A lady had a malignant ovarian tumour removed. The case was aseptic—out of bed on the eleventh day, sitting at her window on the thirteenth, planning to go home the following day. After a good night she awoke complaining that her neck was stiff, and suspected that she had got a chill at the window the previous day. By mid-day definite trismus had developed; by evening marked opisthotonos and general convulsive seizures, death taking place just forty-eight hours after the onset of the disease.

All operation work was at once stopped, and the theatre closed. Prophylactic doses of antitoxin were given to most of the patients in the house who had been operated on during the previous two weeks. The theatre and preparation room were thoroughly disinfected and re-enamelled. Most of the enamelled articles used in connection with the theatre were put away and new dishes, &c., got in their place.

Complete investigations were then set on foot. In particular our attention was directed to the catgut, the general impression being that this was by far the most likely cause of infection. The acuteness of the disease, after an incubation period of fourteen days, suggested that the infection had come from the catgut as it dissolved in the peritoneal cavity. When everything used in the theatre had been pronounced bacteria free, and the repainting of the rooms finished, work began again, when in the beginning of October, 1908, just

five weeks after Case III., the fourth and last case occurred. As it was very similar to Case III., I mention only that the operation was an ovariotomy. The case was aseptic; the onset of tetanus was on the tenth day, and death took place within three days.

The theatre was again closed. All the patients in for operation were sent out to other private hospitals, and we decided to allow no further operations until something definite had been found and corrected.

You will remember that it was not until the third case had occurred that we were certain that we were face to face with a serious outbreak of tetanus. I then went over to London to try and find out the views held there on the probable sources of post-operative tetanus infection, as I knew no one in Dublin with any experience of such an outbreak. While I did not succeed in getting exactly the information I wanted, I yet learned several important facts about tetanus. The chief of these was the great difficulty experienced in finding tetanus even in typical traumatic cases. From a number of such cases seen yearly the bacillus had hardly ever been found. Inoculation experiments, as a rule, were negative.

At the London hospital specimens of the catgut are examined frequently. In every case in which suppuration occurs the ligatures are examined. In this way many thousands of pieces of catgut have been examined, and tetanus had never been found. For many years they had used the method we were using (Fowler's)—that is, washing the catgut in ether, soaking for some days in alcohol, and boiling in alcohol in a Jellett's steriliser for twenty minutes. They have now adopted the kumol method, not because they had any fault to find with the asepsis of the gut prepared by Fowler's method, but because the kumol gives a stronger heavy gut than the other method.

I also interviewed the London representative of an American firm who supply sterilised catgut, and who rely on a combination of dry heat and the kumol method for rendering it aseptic. After the perusal of a good deal of literature on catgut sterilisation, which he kindly lent me, I felt bound

to form the opinion that our present method of sterilisation was not sufficient.

I was also informed that some cases of post-operative tetanus in America had been traced to enamelled tinware. This had been packed in straw, and in cracks in the enamel tetanus bacilli had lodged, and were cultivated from the dishes.

Inquiries made for me by Mr. Fannin, from the catgut manufacturers, elicited the following facts:—The Saxony factories seem to have almost a monopoly in supplying Great Britain with catgut. The sheep's intestines are bought in the open market. No precautions are taken to find out whether the sheep were healthy or not. The intestines are opened, washed, and put into brine. After a time they are removed from this solution, and the mucous membrane is scraped off. The muscular and serous coats are then put into fresh brine. Later they are cut into strips of varying width, twisted, and dried, the manufacturer, of course, giving no guarantee that the catgut is sterile. Mr. Fannin gave me small pieces from all the catgut he had in stock, and from these, without any sterilisation, attempts were made to grow tetanus, but without any success. Some of the gut was partially digested first, but this also failed to produce tetanus. The source and methods of manufacture of the catgut had remained the same for many years. There seemed no special reason to blame the catgut for this sudden appearance of tetanus.

In the two typical cases there had been no drainage; the wounds had been closed at once. The infection must have taken place during the operation. As these two cases had the longest incubation periods it was reasonable to suppose that infection had in all the cases taken place in the operating theatre. The four cases had occupied different rooms on different floors. As it was of importance to know what things were common to all the cases I systematically wrote down the name of every person and article that had come in contact with each of the four cases during the preparation in the theatre and immediately after the operation. I will not trouble you with this list, which proved a very long one. The only things in common

to all the cases were—the theatre sister, the theatre, air from the same source, water from the same source, catgut from the same source, and, lastly, sponges and dressings from the same source. I had by this time realised the enormous difficulty there was in demonstrating the presence of tetanus bacilli in wounds that we knew must be infected, and in which the organism must be present in both an active state and in considerable numbers. Since this was so the chances of finding tetanus was extremely slight in any of these possible sources of infection, where the bacillus could exist only in very small numbers, and probably not in at all an active state. Other means than bacteriology had to be used to trace this infection to its source.

Several of these possible sources of infection were easily excluded. All those who knew the care with which the theatre sister carried out the sterilisation work in connection with the theatre felt certain that the tetanus had occurred through no fault on her part. Indeed, the uniform aseptic results obtained in the theatre gave further proof that this view was correct.

The Theatre.—All the cases had been operated on in the main theatre; scrapings were taken from the walls, roof, floor, and windows by Dr. Rowlette and examined for tetanus, but without result. The theatre had been throughout clean and fresh, as it had been twice painted during the year. Over 2,600 operations had been done in it since the home opened without any trouble following. It seemed reasonable, under these circumstances, to also exclude the theatre.

The Air.—Air came into the theatre in two ways—from the corridor, inside air, and outside air through ventilators. Three months before the first case happened a new door had been made in the corridor off which the theatre opens. This entailed cutting through an old wall. It was suggested that the dust from this might be contaminated. Two facts were against this—the corridor and theatre had been cleaned and repainted after this work was completed, and it seemed impossible that dust infection would lie for a year dormant, and then make itself felt with increasing violence.

Outside the hospital nothing had been done in the neighbourhood that offered any possible explanation of air contamination there. In order to be on the safe side, the old ventilators were removed after Case III. and efficient air filters were substituted. In spite of this change the fourth case occurred. Cultures from plates exposed to the theatre air were negative to tetanus, or, indeed, to any pathogenic organisms.

The Dressings and Sponges.—The latter only came in contact with the deeper parts of the wounds. No change had been made in the source which from these were supplied, but for some time previous to the outbreak the sponges had been stitched by a sewing maid in a small room off the entrance hall. It was felt that dust from the road might easily blow into this room, and after Case III. the sponges were made in a room upstairs near the theatre, but this change failed to prevent Case IV. from occurring.

Dr. Harvey several times tested the dressings and sponges by putting tubes containing sporing anthrax in among them—the ordinary process of sterilisation to which they were subjected in every case completely destroying the anthrax.

There remained then only the water and the catgut. The general consensus of opinion fixed the blame on the latter. Catgut, no doubt, has been the cause of tetanus in some cases. I was, however, inclined to suspect the water. My reasons were these.—The catgut was in no way peculiar to this private hospital; nearly every hospital in Dublin was supplied with catgut by Mr. Fannin, and many used the same method of sterilisation. The London hospitals were supplied from the same catgut factories, and out of an enormous number of operation cases done in them no tetanus had followed. In Dublin, I believe, in another hospital, one or two cases of tetanus had occurred after operation during 1907; but even allowing for this, the fact that three cases in four months' time developed tetanus, out of sixty-nine cases operated on, made it certain that some local condition must be at fault. Remember, too, that in each of the three cases the catgut came from different stock supplied by Mr.

Fannin. From his books it appeared that all were from different consignments of catgut sent to him from Saxony. It was inconceivable that out of all this varied stock our hospital alone should receive infected catgut.

The Water.—Our supply is from the Vartry. When one thinks of the frequency with which tetanus is found in surface soil, it is obvious that the Vartry must be exposed to infection. Yet it is curious that repeated examinations of the Vartry and other similar water supplies have failed to show any sign of tetanus. This freedom is usually assigned to the exposure to sunlight. The difficulty in cultivating tetanus may also be a possible cause of failure. The Vartry water cannot be blamed for this outbreak, for it, too, is common to many of the Dublin hospitals. I have already pointed out that a large number of cuts, &c., are treated year by year with unsterilised Vartry water, into which an antiseptic not capable of destroying tetanus spores has been poured, yet tetanus never follows such treatment. While the Vartry direct is common to all, the cisterns in each house provide a possible source of infecting the water supply. Our cold water supply was Vartry direct; the hot water supply was found to be insufficient for the needs of the hospital, and a new hot water system was installed in the summer of 1907, or two months previous to the first possible case of tetanus. The original cistern had been on the roof, the new and larger cistern was placed under the roof. After Case III. I had this cistern examined. It was reported as perfectly clean. After Case IV. I examined this cistern myself. It was in complete darkness under the roof. With the aid of a strong electric light I made out that it was covered with grooved and tongued boards, fitting one into another, and lightly nailed down. At one end a board was loose, where it had evidently been removed by the plumber. Lifting this, the end of the cistern exposed appeared to be quite clean. I suspected that the plumber had argued from the particular to the universal, as none of the other boards showed any signs of having been recently moved, and this proved correct, for on removing all the boards I found growing at the far

end of the cistern several masses of red fungoid-looking material, each about the size of my fist. Here was something obviously abnormal. A new cistern and piping were put into a well-lighted and ventilated room made for this purpose beneath the roof, and with this change the tetanus outbreak ceased, and since then some 130 cases have been operated on, including over thirty laparotomies, without any mishap.

Both Drs. Harvey and Rowlette examined this fungus for tetanus, but without success. The fungus itself was a putrefactive one, giving off an unpleasant odour when grown. In a couple of stained smears of this fungus single bacilli were seen, but no definite conclusion could be drawn from these.

The fungoid masses were growing in a straight line across the cistern. Implantation had evidently taken place by something falling down between the boards covering the cistern. Along this line, lying on these boards, was a considerable sprinkling of mortar, which had fallen from the roof. It is interesting to note, as Dr. Harvey pointed out, that mortar used in between slates is often mixed with cow or horse hair to make it more binding. It seems more probable that some tetanus spores may have been carried in the water, and found in these fungoid masses a suitable place to live in. As long as the bacilli could grow under comparatively favourable circumstances—that is, not exposed to air, and in the dark—no spores formed, and the bacilli themselves were readily destroyed by ordinary sterilisation. Twice at the beginning of June this cistern had run dry, through the water being turned off in the street outside. The drying of the cistern, which must have been harmful to the growth of the bacilli, would be followed by spore production. Some of these spores must have escaped destruction, in spite of the methods of sterilisation used, and tetanus had resulted.

I come now to the point of the greatest importance. Dr. Harvey, in testing the catgut, also carried out a number of experiments with gut inoculated with tetanus, or with sporing anthrax, as the latter has about the same resisting

power and is easier to obtain in a sporing state. The infected gut was placed in a Jellett's steriliser and boiled for intervals varying from ten to thirty minutes. Such catgut, prepared by Fowler's method and boiled for over twenty-three minutes in the steriliser, gave a free growth of anthrax when it was planted out. It requires, in fact, full thirty minutes' boiling to destroy such sporing organisms.

Dr. Jellett has since shown me that in the original article in which he described his steriliser this was pointed out. At the present time I think the impression very generally prevails that twenty minutes boiling will sterilise anything in the nature of pathogenic organisms.

All the water used in the theatre was, of course, sterilised, both hot and cold being boiled for about two hours, never less than an hour and a half—this must have killed all the spores. The saline solution was made from a concentrated saline solution, made up twenty times too strong, sterilised by boiling for twenty minutes, and then filtered into sterilised bottles, sufficient being made to last for about a fortnight at a time, and this, I believe, was the means by which infection reached the patient. The catgut also, prepared as it was by twenty minutes' boiling, was a possible source of infection, but, as I have already pointed out from the nature of the outbreak, a most improbable infecting agent.

For some time past I have been in correspondence with Drs. Drummond and Richardson, of the Newcastle-on-Tyne Infirmary. The latter has just published a most interesting account of post-operative tetanus cases collected by him, including the cases I have brought before you in this paper. These amount to twenty-one. In all catgut was used. In nearly all the catgut was blamed for the infection, and examined. In none was tetanus definitely found.

The conclusions I have formed are as follow:—

1. That with the bacteriological methods we at present possess failure to demonstrate the presence of tetanus is of little or no importance.

2. That infection of the human tissues with tetanus is

difficult; at least three conditions must be present before this can occur.

3. These conditions are—the presence of the bacillus or spore of tetanus, the presence of a putrefactive organism, and the presence of dead animal tissue.

4. The first and, I believe, the second of these were supplied by the contaminated water; the dead animal tissue was probably supplied by the catgut. This may also have supplied the necessary tetanus spores.

5. That fully thirty minutes' boiling is required for thorough sterilisation. There is some doubt if any method at present in use can insure complete sterilisation of catgut without diminishing to a considerable degree its strength.

ART. II.—*The Use of Carbon Dioxide Snow in Dermatology.*[a] [Illustrated.] By RICHARD L. SUTTON, M.D.; First Assistant in Dermatology, University Medical College, Kansas City, U.S.A.

WHILE the value of carbon dioxide snow as a therapeutic agent in certain cutaneous disorders is now quite generally appreciated, few men, other than those who make a specialty of diseases of the skin, realise the facility with which it may be utilised or the excellent results that may be obtained by its use in selected cases.

Pusey (1), of Chicago, at the Thirty-first Annual Meeting of the American Dermatological Association, first suggested the possibility of employing it, and to him belongs the credit of introducing it to the profession.

The use of intense cold as a caustic is not new. As early as January, 1900, Dethlefsen (2), of Denmark, reported cases of lupus vulgaris successfully treated by means of the ethyl chloride spray, and Saalfeld (3), of Berlin, in July of the same year, announced that he had secured very good results in lichen, ruber planus, chronic

[a] This paper was read, and a demonstration of the method given, at the Annual Meeting of the Medical Society of the Missouri Valley, held in St. Joseph, Mo., March 18, 1909.

eczema, warts, and ulcus molle from the use of liquid air. In America, Trimble and Dade (4) probably have had the widest experience in the employment of liquid air, although Whitehouse (5), Hartzell (6), Hubbard (7), and others have used it quite extensively. While its therapeutic value is great, its excessive cost, together with the difficulty of obtaining and handling it, have deterred many from its use. Prior to the introduction of the Dewar flask the transportation of the liquid to any considerable distance was practically impossible because of its instability and the loss by evaporation. Another objection to liquid air is its extreme frigidity. This renders it impossible for anyone but an expert to regulate its action and secure only the desired results when the agent is applied to the skin. That even experienced operators are not wholly immune from disagreeable accidents is shown by their reports. Carbon dioxide snow possesses, in common with liquid air, the essential property of intense cold, while it has few of the disadvantages of the more powerful aqueous refrigerant.

That the results secured by the use of both agents are due to their caustic and not to their antiseptic action has been shown by the laboratory experiments of White (8), in 1899, and of Mcfadyen (9) and Wolff and Meyer (10), in 1902. These investigators demonstrated that long exposure to liquid air (which has a temperature of – 120° C., 55° C. colder than carbon dioxide snow) failed to kill even the less resistant micro-organisms, its effect being only slightly inhibitory at best.

Carbon dioxide gas, which is almost universally employed in operating soda fountains, is marketed in wrought iron containers, each of which holds twenty pounds of the liquified gas. The gas is obtained by the combustion of coke, and is condensed by pumping it into these cylinders at a pressure of twenty atmospheres. One cylinder contains sufficient gas for fifty or more ordinary treatments. The cost is about $2.50 per twenty pounds.

In order to secure the snow, which forms when the gas is allowed to escape into the external air, the container is first tipped up until the valve end lies six inches below the level of the closed extremity. A frame, consisting of two forked uprights, one eighteen inches in height, the other two feet, rendered stable by a connecting bar, three feet in length, is a rough but efficient substitute for the stand devised by Dr. Pusey, and will save a great deal of heavy lifting, and prevent much scarring of office furniture.

A double layer of chamois is now wound about the projecting pipe in such a manner that a small pocket lies opposite the escape vent, the edges being closely drawn so as to prevent any escape of gas laterally. The chamois covering being firmly held in place, the vent is gradually opened by means of the small wrench, and the gas allowed to flow into the chamois pocket, where it condenses.

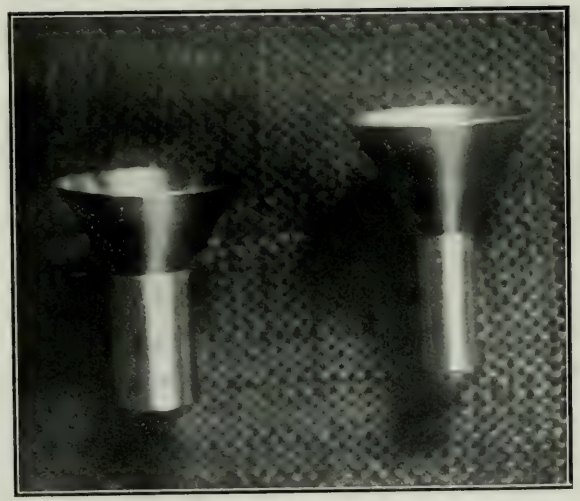
Heidingsfeld (11), of Cincinnati, prefers to wrap the chamois about the escape vent in such a manner that a rough pencil is formed by the newly-made snow, this being afterwards moulded and kneaded into the desired shape on the smooth surface of a marble slab. Pusey uses a set of moulds, which are simply abbreviated sections of hard rubber tubing, into which the snow is pressed with the blunt end of a lead pencil. I (12) prefer to scoop up the snow and transfer it to a funnel-topped mould—a device of my own contriving, which I have found very handy and practicable.

The substance evaporates quite slowly, especially if tightly packed; but an inexperienced or clumsy operator will usually waste about half of it before the application is made.

If a large area is to be attacked (an operation which should be performed piece-meal) the stick is trimmed to a square point in order that the surface may be evenly covered. The properly-shaped mass is now grasped with the finger-tips, which are protected by a bit of chamois, and applied to the lesion.

PLATE I.

Dr. Sutton's Carbon Dioxide Container and Stand.



Dr. Sutton's Funnel-topped Mould for Carbon Dioxide Snow.

The effects produced depend upon two factors—First, the amount of pressure exerted (the stronger the pressure the deeper the tissues will be frozen), and, second, the duration of the freezing (Pusey).

The freezing process is practically painless, the sensation experienced by the patient being almost identical with that felt when a piece of ice is pressed firmly against the skin. While the tissues are thawing, however, the patients frequently complain of itching and burning at the point of former contact. Personally, I have found it far less distressing than the pain which results from the use of the electric needle.

The snow is applied for periods varying from ten to sixty seconds, the latter sufficing for the deeper growths and the thickest and most resistant epidermis. Heidingsfeld has shown that a more complete superficial destruction can be accomplished by several applications, repeating the process immediately after the tissues have thawed out from the previous freezing.

Shortly following the freezing a wheal develops, accompanied by an intense hyperæmia, which persists for some time. A bulla usually forms in six or eight hours. If the application was of short duration (from five to ten seconds) the contents of the vesicle may be absorbed, and the slight scaling of the epidermis is the sole sequel. If the process is continued for a longer period (from ten to thirty seconds) the results are more pronounced, and the resulting bulla, which almost invariably becomes infected, somewhat resembles one of the lesions seen in impetigo contagiosa.

Applications of more than thirty seconds' duration usually give rise to more or less scarring. The cicatrices, which are white, because of the obliteration of the smaller blood vessels, are thin, soft and inconspicuous.

For the first day or two the bulla may be protected, if necessary, by a perforated felt pad, but when fully developed it should be drained, and an antiseptic dusting powder applied for twenty-four hours. The lesion is then

dressed with a one per cent. ammoniated mercury ointment until it is healed.

I have been using carbon dioxide snow in my work for almost a year, and, during that time, have employed it in 108 cases. The results in some instances were most excellent, in others they were disappointing.

At present I am confining its use, for the most part, to a rather limited number of pathological conditions—naevi, lupus erythematosus, chloasma, senile keratoses, plantar and palmar warts, obstinate circumscribed patches of chronic eczema and seborrhoic dermatitis, and superficial epitheliomata.

In eighteen cases of naevus the results have been very good, especially in the larger pigmented growths and the superficial vascular ones. It seems hardly possible that one should secure satisfactory results in the deep-seated vascular varieties. In order to destroy them the vessels at the base must be obliterated, and this would be difficult to accomplish without extensive destruction of the overlying tissues.

For the removal of small moles, from the size of a pinhead down, I prefer the electric needle. It is in dealing with the large, flat, or slightly elevated, pigmented, smooth, or hairy naevi that carbon dioxide snow proves most valuable. In these I have found it superior to any other agent with which I am acquainted.

In the removal of tatoo marks my efforts were not crowned with success, repeated applications for forty-five seconds failing to remove the pigment to any appreciable extent. A spot of chloasma is readily destroyed by a short period of freezing (from twelve to twenty seconds, with a moderate degree of pressure), and equally satisfactory and speedy results can be obtained in circumscribed patches of chronic eczema and seborrhoic dermatitis.

In lupus erythematosus the effects are quite good. I have had opportunity to try the snow in only three cases, one of twelve years' standing, one of seven years, and

one of nine months. Marked improvement, apparently permanent, followed its use in the first two, but the last was benefited little, if at all.

Zeisler (13), one of our most experienced dermatologists, and a very conservative reporter, speaks highly of the results secured by its use in this extremely obstinate and erratic affection. Thus far he has treated six cases with the agent, and he sums up his experience with the statement that he considers it far superior to any other known method with which he is familiar

Heidingsfeld, who at first was greatly pleased with the results he secured in eight cases of lupus erythematosus, announces in a second paper (Heidingsfeld and Ihle (14)) the recurrence of the eruption in three of the cases which previously had manifested the greatest degree of improvement. He considers the measure a valuable one in this disease, but no more certain or trustworthy than the older and better known methods.

I have found the snow to be a most excellent caustic for the destruction of senile keratoses. One application, of thirty seconds' duration, generally is sufficient.

In dealing with superficial epitheliomata it is best to thoroughly freeze the lesion for forty or forty-five seconds; then, after allowing the tissues to thaw, re-apply the refrigerant for a half minute or longer. In the cases treated in this manner the results apparently have been almost ideal. The cosmetic effect is almost as good as when the X-rays are employed, and the speed, simplicity and economy of the method are greatly in its favour.

Plantar and palmar warts, Dubreuilh (15), which are so resistant to ordinary therapeutic measures, promptly and permanently disappear after one or two sixty-second applications.

I have not applied carbon dioxide snow in tricophytosis (as was done by Saalfeld, with liquid air), nor in several other diseases for which intense cold has been recommended—pruritus, palmar keratoses, X-ray burns, lichen

planus, and lupus vulgaris. In this last I should judge the X-rays or radium to be superior.

In closing, I desire to express my indebtedness to Dr. Pusey for his courteous demonstration of the method to me, and to Dr. Heidingsfeld for much valuable information derived from his exhaustive articles on the subject.

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ART. III.—*Clinical Reports of the Rotunda Hospital.*[a] By E. HASTINGS TWEEDY, F.R.C.P.I., Master; with the co-operation of J. R. FREELAND, M.D., L.A.H.; and BETHEL A. H. SOLOMONS, M.B., Univ. Dubl., Assistant Masters.

BY the recent death of Sir Arthur Macan our hospital has sustained a severe loss. He was a past Master of the Rotunda Hospital, and occupied a position on our Consulting Staff.

[a] Read in the Section of Obstetrics of the Royal Academy of Medicine in Ireland, on Friday, March 5, 1909.

His Mastership was marked by active advance in gynæcological and obstetrical technique. Through his teaching the importance of abdominal palpation and the dangers of vaginal examinations received general recognition throughout the United Kingdom. In perfection of antiseptic methods he was far ahead of the then accepted views, and the success of his practice exercised a powerful influence on the teaching of midwifery between the years 1882 and 1889. It is certain too that general surgery received a great impulse from his practical teaching.

The hospital during Sir Arthur's Mastership was wretchedly equipped, and no one had a keener appreciation of this than he, and it is no secret that he held the gloomiest views as to its future. His forebodings were only saved from fulfilment by the enterprise and untiring energy of his successor, Sir William Smyly, who in reorganising the nursing staff, building labour wards, lavatories, bathrooms, operating theatres, and adding the splendid gynæcological wing, has earned for himself the unfailing gratitude of those who have succeeded to his heritage.

In the year with which our Report deals, 2,882 patients were admitted to the hospital; of these 2,393 entered the maternity hospital either in labour or suffering from complications of pregnancy, and 2,060 were delivered.

Not since the year 1834 has this number been equalled. At that time there was neither a gynæcological nor an extern maternity department. The latter now is responsible for over 2,000 deliveries per annum, so that we may proudly claim the past year as the one in which the hospital has achieved its greatest period of activity.

The morbidity shows a further improvement, 5.30 per cent. as compared with 6.41 per cent. by the B. M. A. standard—*i.e.*, a temperature reaching 100° Fahr. on any two occasions between the second and eighth day of bi-daily taking, the mouth temperature to be recorded, abortion cases to be excluded, and deaths to be included in the morbidity list, regardless of temperature. By our own estimate it is 3.64 per cent., as compared with 3.99 per cent. last year.

Our method of estimating morbidity is as follows:—A patient is considered morbid if her temperature and pulse, taken twice daily, rise above 99° F. and 90 respectively on three consecutive occasions, counting from the beginning of the second day to the time of her discharge, which in normal cases is noon of the eighth day. Abortion cases are included, but deaths without fever are excluded. If a patient's temperature and pulse are above the lines indicated she is not permitted to leave the hospital until they fall to normal for three consecutive takings, and should a patient be kept in hospital after the eighth day, and then show any morbidity, our statistics will show it. Temperatures are always taken in the mouth.

Tables No. 15 and 16 are of great interest, as in them our temperatures are classified both in respect to duration and range; their study affords a very accurate estimate of the health of the house.

Five patients remained over thirty days in the house. Two had pneumonia, one had white leg, one had continued temperature following version for placenta prævia, and one was the case of pyæmia that died.

Of our 7 deaths, the one due to Cæsarean section requires very particular mention. It is the only death we have to record in our series of 10 cases. The woman was apparently in perfect health, and was operated on at full term before the onset of labour. The uterus, on being opened, displayed an almost bloodless condition, and the placenta was so firmly adherent that its removal was accomplished with the greatest difficulty.

During this manipulation the atonic uterus lay flabby and thin-walled without showing the slightest indication of retracting and thickening. Hæmorrhage was very slight, and we proceeded to stitch the uterus without the least foreboding of disaster. Suddenly the anæsthetist announced that respiration had ceased, and the operation had at once to be interrupted whilst successful means were adopted to revive the patient. The pulse, however, remained quite imperceptible, and was never felt again, though death did not take place until three hours after the completion of the operation.

It may be remembered that in 1905–6 I commented on three labour deaths due, in my opinion, to obstetrical shock apart from hæmorrhage. In these cases the uterus was found flabby and dilated. This condition is frequently the accompaniment of adherent placenta, and the dilated condition of the uterus precedes rather than follows the general shock. We consider this case one of the same class.

The two cases of ruptured uterus are typical examples of quiet rupture. In both the rent was extensive, involving the lower uterine segment and vaginal vault. The infants, both dead, were delivered through the vagina—one by forceps and one by manual extraction.

Our treatment in each case consisted in plugging the rents with iodoform gauze. Recovery was uneventful in both, and we think that this good result is largely attributable to the method of plugging. As some confusion appears to exist in regard to the *rationale* of plugging, we think it important to explain our technique.

We plug with a threefold object—(1) To prevent intestines prolapsing into the vagina. (2) To drain away blood already in the abdomen. (3) To arrest further bleeding. Obviously this result cannot be attained if a strip of gauze is pushed through the rent by one ignorant of the result desired. Thus, in such a case we have known a man to push gauze into the abdomen where it was recovered at autopsy lying near the spleen. To fulfil the conditions mentioned it will be seen that a mere strip will be of no avail. A large piece of gauze should be loosely bunched in the hand as a housemaid holds a duster, and introduced *en masse*, so that it firmly fills the rent and exercises pressure on its lips, but does not penetrate into the abdomen to any considerable extent. Within twenty-four hours the edges of the rupture contract and compress the gauze plug. After this, day by day, the plug should be loosened gradually, drawing out a little at a time to permit further retraction of the tear until the last of the gauze may be removed on the fourth or fifth day.

The case of A. C. shows the uncertainty of high forceps and the difficulties that may arise in applying them before

the fixation of the head by its largest diameter. The patient fell into labour in the country, Nov. 8, 1907. Several hours later delivery by forceps was attempted although the head was not fixed. After prolonged and vigorous but ineffectual efforts to deliver, during which the perineum was torn into the rectum, the patient was brought to the Rotunda in a cab, a distance of over twenty miles. She was placed on the couch, and delivered herself, unaided, of a $7\frac{3}{4}$ lb. living child, with a depressed fracture of the right parietal bone, due to the forceps blade. This was raised in the following manner:—The pointed end of one blade of a bullet forceps was sunk through the bone about the centre of the depression. The handle was then raised to the perpendicular and the bone lifted by direct traction.

K. S. was sent to us with a diagnosis of incarceration of a retroverted gravid uterus. This diagnosis was confirmed by us and by one of our consultants who kindly saw the case. The tumour was partially pushed out of the pelvis by repeated daily efforts, but this did not relieve the retention of urine. The fifth day after admission the patient developed a febrile temperature which remained above normal for five days, reaching 101.8° F. on one occasion. On the third day of fever abortion was induced by inserting two bougies. Under the existing circumstances this was deemed safer than cœliotomy. A three and a half months' fœtus came away spontaneously, but the placenta had to be removed with the finger and flushing curette. During the removal of the placenta it was found that the cavity of the uterus ran upward and forward, and that the tumour filling the pelvis was a large, soft fibroid intimately associated with the posterior wall of the uterus. She was kept in the house until involution was complete. During this time she occasionally exhibited an intermittent temperature without apparent uterine cause. Four weeks after emptying the uterus supravaginal hysterectomy was performed. There were several myomata in the uterus, a large one on the posterior wall being markedly softened and degenerated. Convalescence was rapid and uninterrupted.

A. K. well illustrates the immediate benefit ensuing on the induction of premature labour for pernicious vomiting. This is the first case we have had where induction of labour was necessary, all others having recovered under the recognised treatment of gastric lavage, purgation, and absolute starvation,

prohibiting even fluids, including water, by mouth, giving by the bowel what fluid is necessary. This patient seemed in such a serious condition that labour was induced twenty-four hours after admission. The cervix was dilated with Frommer's dilators, and version performed. Labour started in thirty-six hours, and lasted four hours. The fœtus weighed 6¼ lbs., and was found to be macerated when turned. Vomiting ceased as soon as version was done, and it seems more than likely that this was to be attributed to the loss of liquor amnii. In assigning this case to its proper class it may be mentioned that the patient was highly neurasthenic. She was in good health until a few days before admission. Vomiting followed excitement caused by a lecture from a fault-finding sister-in-law.

B. N.—In this case we applied forceps because of acute symptoms due to heart disease. The woman was admitted with failure of compensation, extreme dyspnœa, cyanosis, and beginning œdema of the lungs. Pulse, 150; respirations, 52. She was treated symptomatically with oxygen, morphin, whisky, atropin, strychnin and digitalin. Nevertheless, the symptoms persisted. Thirty-six hours after admission, labour having started and the os being three quarter dilated, a living child was easily extracted with forceps. The cervix apparently did not tear, but examination immediately after delivery showed extensive bilateral tears, which were repaired with catgut and united by first intention. Urgent symptoms abated soon after delivery, and the patient went out on the eleventh day of the puerperium symptomatically cured.

We induced labour for contracted pelvis in A. MacE. We hold that this is an operation seldom justified in a well-equipped hospital. At present our only indication is in the event of receiving a patient up from the country many weeks before full term. Some of these women have never been in a train before, and have been able to get barely enough money for a single ticket to Dublin. Having made a supreme effort to collect sufficient money and nerve to trust themselves in a railway train and reach a city known to them only by tradition, we feel it inhuman to send them back undelivered to their homes in the wilds of Galway or Mayo. On the other hand, we cannot afford to keep them in hospital for an indefinite number of weeks.

Our treatment of eclampsia has undergone no change, and of 12 cases treated one died.

It is interesting to note the increased number of cases of eclampsia that have been treated in hospital in recent years. From 1904 to date we have treated 52 cases; to this may be added 2 private cases; 6 died, a mortality of 11.11 per cent. From 1896-1903, inclusive, 26 cases were treated, with 5 deaths, a mortality of 19.23 per cent. From 1889–1895 inclusive, 35 cases were treated, with 11 deaths, a mortality of 31.43 per cent.

Up to this year we have counted as eclampsia every death in which fits occurred. This year we have excluded one case, obviously uræmia (see Mortality Report).

Our number of contracted pelves, as usual, appears comparatively small, and this has given rise to the impression that the condition is very rare in Ireland; but it must be remembered that we do not record as a contracted pelvis any case based on an uncertain diagnosis; in other words, unless careful measurement with Skutsch's pelvimeter shows a true conjugate not more than 9 cm. We do not believe that there is any other practicable method which provides certainty in these measurements. It is a troublesome operation, necessitating a great deal of vaginal manipulation, and nearly always a general anæsthetic; therefore we do not feel justified in taking measurements unless we have reason to believe that the head will not fix in the brim spontaneously. Such a case is rarely met with in a pelvis over 9 cm.

We would protest particularly against the assumption of accuracy in estimating the true conjugate from the diagonal conjugate. To the many known liabilities to error must be added one which we hold is the most important, though it has not been mentioned before—namely, the stretching of the skin (or glove) that takes place when the fingers are pushed up forcibly towards the promontory. The indentation made beneath the pubes is on stretched out skin (or glove), which at once retracts to its former position when the fingers are withdrawn. From direct observation we have shown that the error caused by this can be well over a quarter of an inch.

Some surprise has been expressed that we do not estimate *post-partum* hæmorrhage by the amount of blood lost. We do not do so for the reason that, in our opinion, it is impossible to draw useful conclusions from such data. It is obvious that the loss of a pint of blood will have an altogether different importance in the case of a pale and delicate woman of 6 or 7 stone weight than in that of a plethoric woman of double the weight. In our 1905–06 Report we alluded to three deaths from what we called labour shock. In none of these was there anything like a pint of blood lost, and yet, in criticism of our diagnosis, we have been told that these women died of *post-partum* hæmorrhage. Our diagnosis of *post-partum* hæmorrhage is based on the extent of constitutional symptoms resulting from free bleeding. There were 35 cases during the year. In 17 cases the pulse rate remained below 100; in 3 it rose to 120; in 10 it varied between 120 and 140; and in 7 it was over 140. Eighteen cases occurred before the expression of the placenta; in 14 of these the placenta was expressed directly from the uterus; in the other 4 the placenta was adherent, and had to be removed manually. Seventeen cases occurred after the placenta had been expressed, three hours being the longest interval between the end of labour and the occurrence of hæmorrhage. There were 2 cases of traumatic hæmorrhage—one from a tear in the cervix, the other from a tear in the anterior vaginal wall, near the clitoris. These were stitched. Seven of the 35 cases followed forceps delivery. The treatment was as follows:—Intrauterine douche followed by gauze pack, 3 cases; intrauterine douche, 9 cases; vaginal douche, 1 case; the other cases were checked by catheterisation, expression, massage, and manual control of the uterus varying from fifteen minutes to an hour. All patients requiring it received free stimulation after the hæmorrhage was stopped. Ergot and ergotinin were also used.

Of 749 primiparæ delivered, 330 required perineal repair. Failures to unite primarily amounted to slightly under 5 per cent. In every case in which union did not take place,

secondary repair on the tenth day proved successful. Our primary repair is carried out as follows :—

A fully curved needle, 2½ inches from eye to point, is threaded with silk-worm gut and held in a long needle holder. The patient lies on her left side, her hips well out to the edge of the couch, the right leg flexed with the right foot on the left knee and the right thigh abducted. The operator's left hand is passed over the woman's abdomen and between her legs. The thumb and middle finger are used to separate the edges of the tear, enabling the operator to see clearly the extent of the laceration; but we do not rely on sight alone, the index finger is used to determine the extent of the injury to one or both levator muscles, and is then inserted to the apex of the tear beneath the vaginal mucous membrane. The stitch nearest the anus is inserted first. Inserted on the skin surface it is passed along the under side of the tear (taking a deep bite of the tissues), then deep to the vaginal mucous membrane, and beneath the index finger in the apex of the tear; then along the upper side of the tear, again taking a deep bite of the tissues, to the skin surface opposite the starting point; the stitch is buried from start to finish. The subsequent stitches are similarly placed, but may emerge on to the vaginal mucous membrane. When the torn muscles are brought together and united in the median raphe they functionate as perfectly as if they had never been torn.

Maternal Mortality.

1. *Cæsarean Section.*—A. F., aged thirty-six years, 4-para, 1 abortion, 1 premature, 1 forceps; admitted Dec. 22: operated Dec. 23, 1907. Operated upon before the onset of labour. Placenta firmly adherent, and removed with difficulty. Uterus did not retract and thicken, and during operation patient collapsed. Revived by artificial respiration and stimulation. Operation finished. Died three hours later.

2. *Pyæmia.*—A. O'B., aged twenty-five years, 1-para; admitted Jan. 26, 1908; delivered Jan. 26, 1908. Vaginal discharge with scalding of vulva and groins. One vaginal examination. Temperature irregular, intermittent and remittent from 1st day.

Four intrauterine douches, 3rd, 5th, 15th, and 16th evenings, antistreptococcic serum (polyvalent), 10 cc. on 5th, 24th, 25th, and 26th days. Credé's ointment on 7th day. Blood cultures showed streptococci on the 23rd day. Leucocytes 40,000. Smears from lochia showed staphylococci, streptococci and bacilli on the 3rd day. Abscess on right side of vaginal fornix opened and drained on 27th day. Patient died on 45th day.

3. *Eclampsia.*—S. A. H., aged thirty-two years, 1-para, admitted Jan. 29, 1908; delivered Jan. 31, 1908. History of six or seven fits before admission. Had seven fits between admission at 6 25 p.m. and 7 30 a.m. of Jan. 30. Bled 12 oz., and transfused 1½ pints at 10 a.m., Jan. 30. Became conscious in afternoon, and took water freely by mouth. Improvement continued during next day, when labour started, and she delivered herself at 10.30 p.m., Jan. 31. For some hours previous to delivery patient began to show signs of circulatory and respiratory failure, which continued after delivery, becoming progressively worse in spite of free stimulation. Patient died 4 a.m., Feb. 1, 1908, 44½ hours after the last convulsion. Treatment consisted in washing out the stomach and bowel, morphin, purgation, bleeding, transfusion and stimulation. Bowels moved freely several times after purgation. Patient had been married eight years, and was never pregnant until a posterior division of the cervix was performed.

4. *Puerperal Insanity.*—W. C., aged thirty-two years, 1-para: admitted Feb. 8; delivered Feb. 9. Normal delivery. Developed puerperal insanity on 5th day, and was violent for about a week. Developed œdema and marked albuminuria on 18th day. Physical examination revealed aortic stenosis and mitral regurgitation. Died on 26th day.

5. *Uræmia—Chronic Heart and Kidney Disease.*—C. C., aged forty years, 13-para. Œdema of legs and marked dyspnœa. Large amount of albumen in urine. Loud systolic murmur at apex. Patient had three fits on the 4th, 7th and 8th of June respectively. On 5th June attempts were made to induce labour by inserting bougies after a hot vaginal douche. Repeated three times, and finally removed June 8th. Labour started twelve hours later, and a six and a half months—3 lb.—dead child naturally delivered. Condition improved for some days, but

on the 18th June, nine days after delivery, patient developed extreme dyspnœa, and died in two hours.

6. *General Peritonitis.*—M. C., aged thirty-one years, 1-para; admitted June 14th; delivered June 15th, 1908. Child premature, six and a half months. Normal delivery. One vaginal examination before admission Placenta incomplete. For sixteen days her temperature varied between normal and 101° F., usually about 100° F. Intrauterine douches on 4th, 8th, 11th, and 15th days. Smears from lochia showed diplococci and staphylococci. Suddenly developed acute general peritonitis on 16th evening, and died within a few hours.

7. *General Peritonitis.*—K. McH., aged thirty-three years, 3-para; admitted August 7th. Incomplete abortion, fœtid, completed with curette. Second and third evening intrauterine douche. Temperature between 102.4° and 103° F. Third evening vaginal examination revealed hard mass in left fornix. At 7 a.m. next morning developed sudden pain and signs and symptoms of general peritonitis. Posterior colpotomy and drainage; but patient died at 3 p.m. same day. No *post mortem*.

(*To be continued.*)

LITERARY NOTE.

A NEW edition of Dr. Burton-Fanning's "Open-Air Treatment of Pulmonary Tuberculosis" (Modern Methods of Treatment Series), is announced by Messrs. Cassell & Co., Ltd., La Belle, Sauvage, London, E.C. In this edition the author deals with the researches of Sir A. E. Wright and his collaborators, as well as with the new methods of early diagnosis, including Calmette's ophthalmo-reaction.

PART II.

REVIEWS AND BIBLIOGRAPHICAL NOTICES.

A Manual of Operative Surgery. By JOHN FAIRBAIRN BINNIE, A.M., C.M. (Aberdeen), Professor of Surgery, Kansas State University, Kansas City; Fellow of the American Surgical Association; Member de la Société Internationale de Chirurgie. Vol. I. Fourth Edition. Revised and Enlarged. With 713 Illustrations, some in Colours. London: H. K. Lewis. 1909. Pp. 832 + xi.

THE volume before us is the fourth edition of this excellent little manual. In our review of the first edition we expressed the opinion that the author should, in a subsequent edition, include the surgery of the limbs, or, in other words, that he should make his manual a complete operative work and not limit it as he had done. We are now pleased to see that a second volume is in preparation by Dr. Binnie on the surgery of the extremities and vascular system.

The volume under review represents, therefore, the first volume of what will be a complete manual of operative surgery. It is, however, the fourth edition of his popular manual on the Operative Surgery of the Head, Neck, Nerves, Trunk and Genito-urinary System. The popularity of the work is shown by the rapidity with which new editions are demanded, and we are bound to add that each edition has undergone a satisfactory revision so as to bring it up to date. New advances and operations are duly recognised and incorporated in the edition before us.

The text is beautifully and profusely illustrated, thereby vastly increasing the educational value of the work. There are 832 pages, including the index of some 26 pages, and there are no less than 813 illustrations, for the most part eminently instructive, while there is scarcely an operation of recognised value or merit that is not described. As formerly, the book

is handsomely bound, and is of a very convenient size. We can strongly recommend the work to every student, and, indeed, everyone desirous of finding a short account of almost every conceivable operation performed upon the regions the book covers.

Injuries and Diseases of the Knee-joint, considered from a Clinical Aspect. By Sir William Bennett, K.C.V.O., F.R.C.S., Consulting Surgeon to St. George's Hospital and to the Hospital of St. John and St. Elizabeth; Senior Surgeon to the Seamen's Hospital, Greenwich, &c. With 34 Illustrations. London: James Nisbet & Co., Ltd. 1909. Pp. 236.

This little work embodies the result of the practical and, we may say, almost unrivalled experience of the author. The information is given in a most readable form. Each chapter represents a clinical lecture on the subject. The entire subject is treated, as might be expected from the author's reputation and position, in an eminently satisfactory manner. The book is by no means crowded with reports of clinical cases used to illustrate the subject, and is thus unlike many manuals on surgical subjects with which we are familiar. The book is one we can cordially recommend to every surgeon—aye, and to every general practitioner.

Hints to Ships' Surgeons. By J. F. Elliott, L.R.C.S., L.R.C.P. (Irel.) London: John Bale, Sons and Danielsson. 1908. 8vo. Pp. 64.

The Passenger Manager of a very prominent Steamship Line sailing south once said to us: "I would keep no doctor for more than three voyages, because a man can have no ambition who wishes to settle down to ship life." This does not agree with the author's opinion, but we cannot help taking our friend's view. With the exception of some of the newer first-class boats a ship-surgeon's life is, for the man of promise, a life without result—for the man who sets before him no goal for his ambition, a life which is very apt to make such a man acquire

lazy habits. And if he be not of a firm mind the temptations to intemperance are very strong. However, the perusal of Mr. Elliott's book has given us great pleasure, and we are certain the allusion in the early pages to the "Dogs' Home" in Duke Street will bring back old memories to many of us. The custom may have altered since our days at sea, as we never were aware that the surgeon had to be present when the crew signed on. We can see no utility in the proceeding, as any examinations made must be of the most superficial character. The author is not correct in stating that it is necessary "to get a line" from a shareholder when applying for a post as ship's surgeon; the best thing to do is to get an introduction from either a Liverpool or a London merchant, whichever of these ports the surgeon had decided to try.

We warn the prospective ship's surgeon that the recognised Outfitter of the line is a gentleman to whom he should give a wide berth. The details of uniform are too well known Several houses will supply him at a much cheaper rate. The above individual, in our judgment, makes too much out of his so-called experience.

In conclusion, we are surprised to notice the omission of the Alfred Holt Co. to China, the most sought after and best paying line in our day.

A Text-book of General Bacteriology. By EDWIN O. JORDAN, Ph.D., Professor of Bacteriology in the University of Chicago. Philadelphia and London: W. B. Saunders Co. 1908. 8vo. Pp. 557.

THIS is a pleasantly written text-book of about 550 pages. It is printed in an unusually clear type, and is fairly well illustrated by more than one hundred and fifty figures scattered through the text. It is based on the lectures delivered by the writer in the University of Chicago, and is intended more for the use of students and practitioners than for advanced workers. The first eight chapters deal with general principles, and include a chapter on immunity, and one on pathogenesis. The chart adopted by the Society of American Bacteriologists, as a guide to follow in attempting the identification of any organism, is introduced into the section that deals with the

methods of studying bacteria. Although rather elaborate for students, its introduction at this part of the book should serve the useful purpose of showing the reader the way in which he should think of bacteria, and the necessity of adopting the rôle of an investigator at every step if he wishes his study to be profitable. The next eighteen chapters deal with the ordinary bacteria that are pathogenic to man. The chapters on the colon-typhoid group are very properly commenced by a short account of the group as a whole. In discussing the diphtheria bacillus the writer admits the possibility of Hoffmann's bacillus being merely a variety of the Klebs-Löffler organism, but expresses his own opinion that they are really distinct species. The *Treponema pallidum* is definitely accepted as the cause of syphilis, and an excellent illustration of it is presented. Chapter XXVII. deals with the pathogenic trichomycetes; Chapter XXVIII. with the yeasts, and Chapter XXIX. with the moulds. A chapter on the pathogenic protozoa then follows, but is rather incomplete. The last four chapters are devoted to the bacteriology of milk, the relation of bacteria to the nitrification of the soil, bacteria in the arts and industries, the bacteria of air, soil and water, and lastly to the bacterial diseases of plants. These are introduced with the object of calling attention to the general importance of bacteriology, apart altogether from its relation to disease, and indeed throughout the book the author neglects no opportunity of showing the wide influence exerted by micro-organisms on the world in general. A short appendix deals with infectious diseases of unknown causation, and on the work that has up to the present been done in connection with their ætiology. We have pleasure in recommending the book.

Aids to Medicine. By Bernard Hudson, M.D. Camb.; M.R.C.P. Lond. London: Baillière, Tindall & Cox. 1909. Fcap. 8vo. Pp. x + 250.

Whether there be sufficient demand for books of this character to justify their publication may be left to the better judgment of their publishers. We feel with regret that they are making no miscalculation. But whether in the interest of Medicine such publications are justifiable

is another matter, and in our opinion they are wholly unjustifiable. It seems to us that such books are not only useless for sensible medical education but are injurious to the ideals and true aims of the profession. Their very conciseness in dealing with a limitless subject gives a fundamentally wrong idea of the subject; besides, Medicine is no longer a branch of Astronomy, and is, indeed, very far removed from being an exact science. But almost of necessity such books consist of a list of statements generally accepted as facts. They can give no idea of proportion, convey no idea of the relative value of signs or symptoms, less still can they inculcate that power of logical reasoning, without which the most widely-read practitioner is unfitted to deal with any case of illness. What useful purpose, what purpose at all, these books may serve we are unable to say, but we suspect the majority of readers will be found among those medical Laodiceans who hope to cope successfully with an easy paper and an indifferent examiner.

Having said so much against such publications in general we cannot express much cordiality towards this one in particular. We must not, however, be understood as condemning all in our opinion of this one. As a mere enumeration of contingencies to be expected in various diseases the book is well enough. True, with many points (on which the author has room only to be dogmatic) we are inclined to quarrel, but we recognise how little philosophically Medicine can be exploited in 252 short pages, and are ready to admit that the author has made the best of a sad undertaking.

The Practice of Medicine. By the late M. CHARTERIS, M.D. Ninth Edition. Edited by F. J. CHARTERIS, M.D. London: J. & A. Churchill. 1909. 8vo. Pp. xiv + 689.

THIS volume should prove useful to those who are beginning the study of Medicine. It is a quite good little text-book, and written in a readable way. It covers ground not always touched on in text-books of Medicine, several pages being devoted to diseases of the skin. In

an appendix will be found much useful information, including the method of performing an autopsy, the way to prepare the simpler invalid foods, and a therapeutical index, including lists of health-resorts considered suitable for specified ailments. It is an unpretentious volume, but is really a very good one.

The Operative Treatment of Chronic Constipation. By W. Arbuthnot Lane, M.B., F.R.C.S. London: James Nisbet & Co. 1909. Folio. Pp. 70.

Mr. Arbuthnot Lane in this book recapitulates much which has previously appeared in various journals under his name.

The title is rather misleading, as fifty-six pages out of seventy are devoted to pathology, diagnosis, &c., while only fourteen deal with treatment. This makes the work more valuable to the general practitioner and physician than to the operating surgeon. The logical method by which he explains the dilatation of the intestines, the formation of non-inflammatory adhesions, the local constrictions, the toxic poisoning of the patient, is equalled by the graphic description of the displacements of the kidneys, the stomach, and the pelvic viscera. Mr. Lane particularly calls attention to "so-called" volvulus, and points out that nearly all abdominal lesions are traceable to chronic constipation as their prime cause.

In giving a lucid account of the changes in the great gut, he mentions that the rectum is greatly altered from normal, but gives no definite reasons for these changes. This at once opens up the question whether the dilatation of the colon is not really secondary to that of the rectum, rather than primary in the cæcum as Mr. Lane maintains.

The book would be more valuable to the surgeon if an accurate account of the cases had been given, especially as regards results. A mortality of one in nine private cases is valueless, especially as cases seen in hospital practice are usually much further advanced.

There are several minor points which call for criticism. In a book of such size it should be remembered that its

value will depend upon the accuracy of the observations made, rather than upon such personal matters as whether Mr. Lane was or was not inspired by Metchnikoff.

Messrs. James Nisbet & Co. are to be congratulated on the elegant way in which the book has been turned out.

Luke, the Physician: with Remarks on the Literary, Dramatic and Medical Quality of the Third Gospel, and the Acts. By GEORGE HOMAN, M.D. Brooklyn, New York: Reprinted from the "*Aesculapian*," December, 1908. 8vo. Pp. 8.

DR. HOMAN has been reading Professor Harnack's "Luke, the Physician," and this study has suggested to him some thoughts that are embodied in this paper. Our information about the life of the "Beloved Physician," as Saint Paul calls him, is unfortunately scanty, and Dr. Homan has nothing to add to our knowledge on the subject, but confines himself to an appreciation of the literary and dramatic qualities of the Third Gospel and the Acts. Luke, like many of the ancient Greek medical writers, was an Asiatic Greek, being born in Antioch, in Syria. Where he studied medicine we do not know, but he was probably familiar with the ancient medical writers, as in both the Gospel and the Acts he uses many words and phrases which were common in the writers of the Greek medical schools, and that, too, in a technical sense confined to professional writings. As an example of this we may take the description of the healing of Simon's wife's mother, who was suffering from "a great fever" (πυρετῷ μεγάλῳ, Luke IV., 38). This term is used by Luke alone in the New Testament, but Galen tells us it was usual with ancient physicians to distinguish fevers by the terms μέγας and μικρός. Again, in recording the saying, "It is easier for a camel to go through a needle's eye" (Luke XVIII., 25), the words used by St. Luke differ from those used by both St. Matthew and St. Mark. St. Luke says διὰ τρήματος βελόνης. The word βελόνη is the term regularly used by Hippocrates for the surgical needle, and the word τρῆμα was also in common medical use.

Dr. Homan draws attention to the curious fact that though St. Luke appears to dwell with particular interest on the miracles of healing, he nowhere claims for himself the possession of miraculous powers or intimates their exercise by him.

It is only as an on-looker that St. Luke records these miracles of healing, and Dr. Homan suggests that this was possibly a "compromise between the science of the physician and the faith of the disciple." We should remember, however, that to St. Luke the miracles of healing appeared in a different light than they would to a physician of the present day. It is true Hippocrates gives little countenance to supernatural agencies in either the causation or treatment of disease. St. Luke as a physician, however, must have been familiar with the incubation, as practised in the temples of Asklepios at Epidauros and elsewhere, in which cures were attributed to the God, not less wonderful than those recorded in the Gospel. It would appear, as Dr. Homan shows, that St. Luke was of a highly poetic and imaginative temperament. One need only read the first chapter of his Gospel to appreciate this. He was a firm believer in the teacher of the new religion, attracted to him possibly by that quality of φιλανθρώπως of which he speaks, and to such a believer all things are possible.

Whatever view we may take of St. Luke as a physician he must always rank among the foremost of those of our profession who have adorned literature, and to Dr. Homan for again drawing attention to this fact our thanks are due.

Clinical Diagnosis. By Charles Phillips Emerson, A.B., M.D. Second Edition. Philadelphia and London: J. B. Lippincott & Co. 1908. 8vo. Pp. xxv + 686.

Under its somewhat misleading title, "Clinical Diagnosis," appears the second edition of Dr. Emerson's excellent "Text-book of Clinical Microscopy and Clinical Chemistry for Medical Students, Laboratory Workers, and Practitioners of Medicine."

The first edition of the book was deservedly popular and well received, and we believe this issue will be found even more useful to all those for whom it is intended. The book has been largely rewritten, added to, and brought up-to-date. Though of considerable size, the volume is not filled with a large number of untried methods of investigation, nor details of tests, the value of which is still hearsay to the author. It is a practical book, and the information it contains can be relied on. A few of the illustrations are hardly up to the average excellence of the others, but this is only to be expected where the standard of excellence is very high.

Publications of the Research Defence Society, 1908–1909. Macmillan & Co. 1909. Pp. xvi + 216.

The Research Defence Society was founded in London on 27th January, 1908, "to make known the facts as to experiments on animals in this country: the immense importance to the welfare of mankind of such experiments; and the great saving of human life and health directly attributable to them." The first president of the society is the Right Hon. the Earl of Cromer, G.C.B., G.C.M.G., O.M.

A few weeks ago the volume under review appeared, containing the first issue of the Society's collected publications. These are as follows:—(1) The President's Inaugural Address, delivered on 19th June, 1908; (2) A Statement of the Experiments performed on Animals in Great Britain and Ireland during 1907; (3) Some Facts as to the Administration of the Act under which Experiments are Performed, taken from the Evidence given before the Royal Commission; (4) On the Use of Dogs in Scientific Experiments, by Professor E. H. Starling, F.R.S.; (5) On the Anæsthetics used in Experiments on Animals, taken from Evidence by various witnesses before the Royal Commission; (6) The Evidence of Lord Justice Fletcher-Moulton before the Royal Commission; (7) The Experimental Study of the Action of Drugs, by Professor A. R. Cushing, F.R.S.; (8) The Value of Anti-toxin in

the Treatment of Diphtheria; (9) The Value of Anti-meningitis Serum in the Treatment of Epidemic Cerebro-spinal Meningitis, by Dr. A. Gardner Robb (Belfast); (10) Advance in Knowledge of Cancer, by Dr. Bashford, reprinted from "Nature"; (11) Yellow Fever and Malaria, by William Osler, M.D., F.R.S.; (12) The Extinction of Malta Fever, by Sir David Bruce, K.C.B., F.R.S.

Lord Cromer, in his address, gives the reasons which induced him to accept the office of President of the Society, though not himself a scientific man. One of these was his wish to show that the "humane men who have been so constantly accused of wanton cruelty to animals . . . had the sympathy of those who had taken an active part in the prevention of that cruelty." In Egypt he had been president of the society which conducted a long and fairly successful campaign against cruelty to animals in that country. Others were that it had been established that experiments on animals had already produced invaluable results, and that they were conducted in such a manner as to minimise, if not altogether obviate, the infliction of pain.

In the second article valuable summaries of the different classes of experiments performed during a single year in this country are given. The total number for Great Britain and Ireland in 1907 amounted to 73,532. Of these 96.5 per cent. were simple inoculations performed mainly on guinea-pigs and mice. In the remaining 3.5 per cent. the majority (2.5 per cent.) were upon anæsthetised animals not allowed to recover after the experiment was over. The balance (1.5 per cent.) included all other experiments in which, after an operation under anæsthetics, the animals were kept for observation. In these cases antiseptic precautions were observed, and if they failed in any instance the animal was required to be painlessly killed. In no experiments other than inoculations were anæsthetics omitted.

Amongst other things referred to in the third publication is the possibility of unlicensed experiments being illicitly performed. Mr. Byrne, then principal Clerk in the Home Office, states that in thirty years they had not heard of one instance,

and is sure that if they did occur somebody would certainly denounce them. In this article information is also given concerning the steps that must be taken to obtain leave to perform experiments. These are (1) to procure the proper form of application, (2) have this form duly filled in and afterwards signed by two members of a small body of distinguished men qualified to do so, (3) to submit the application to the Home Office, (4) the Home Office sends it on for advice to the Society for Advancement of Medicine by Research, (5) next submits it to the Inspector, who then (6) advises the Secretary of State.

Professor Starling, in the succeeding article, shows that for certain experiments the dog is indispensable—notably, in experiments on digestion—since the digestive system in no other animal presents so marked analogies to that of man. He also shows that such experiments, to be of any value, must of necessity be painless, since pain is the most disturbing of all factors to the normal processes of digestion.

In the article on anæsthetics the use of curare, amongst other subjects, is considered. The drug is now seldom used in this country, and never without the simultaneous administration of a recognised anæsthetic. Reasons are also given to show that, even if this latter were omitted, a sufficiently large dose of curare can paralyse not only motion, but also sensation, and that there is no difficulty in making sure that curarised animals are sufficiently anæsthetised to prevent the possibility of sensation. Amongst other guides the state of the blood-pressure and the percentage of anæsthetic administered are reliable indications.

The evidence of Lord Justice Fletcher given before the Royal Commission on 24th June, 1907, forms the next contribution, and extends over eighty pages of the book. It makes excellent reading, and is probably the best, most logical, and finely-reasoned defence of vivisection that has anywhere appeared. The writer speaks from conviction as a layman. He is certain that from experiments on animals an incalculable amount of good has been derived, an inestimable amount of pain and suffering prevented: that the number of painful experiments is quite infinitesimal,

far less in a whole year than would be caused in a single shooting party by one or two bad shots; and, moreover, "it is the only bit of fruitful pain in the whole world." But justice cannot be done to the evidence within the compass of a review. It is an article that every medical man should read, mark, learn, and inwardly digest.

In the next contribution, by Professor Cushing, a list of some fourteen classes of commonly used drugs is given, in all of which the only modern additions of value have resulted from experiments on animals. The matter is, in fact, summed up in the following sentence:—"In the last forty years, during which the experimental method has been so fruitful in valuable remedies, the only drug of even mediocre importance introduced by other methods is pilocarpine, introduced from its being used by the South Americans as a sudorific."

It is not too much to say that every article in the book furnishes incontrovertible evidence in support of the value of experiments on living animals. The saving of life due to the introduction of anti-diphtheritic and anti-meningitic serums, with which the two next following articles deal, are cases to the point. Not less is this shown in the account of the painstaking work of Dr. Bashford and his colleagues in their search for the cause of cancer.

The concluding articles of the book are almost of thrilling interest, particularly the account given by Professor Osler of the work done by the United States Yellow Fever Commission in Havannah, and hardly less so the systematic hunting down and extinction of Malta Fever by the careful work of Sir David Bruce.

The book as a whole shows what enormous strides have been made in the progress of Medicine during the last two decades progress that could not have been achieved in any other way than by experiments on animals. It is one that should be on every medical man's shelf to be used as a work of reference for the education of public opinion. In the last resort it is with the public that the responsibility must rest of deciding whether the medical man of the future, in his struggle with the agencies of disease, shall or shall not have the advantage of the

only method by which progress in any science has ever been made—namely, the experimental as contrasted with the observational.

Surgery: Its Principles and Practice. By Various Authors. Edited by WILLIAM WILLIAMS KEEN, M.D., LL.D., Emeritus Professor of the Principles of Surgery and of Clinical Surgery, Jefferson Medical College. Philadelphia; and JOHN CHALMERS DACOSTA, M.D., Professor of the Principles of Surgery and of Clinical Surgery, Jefferson Medical College, Philadelphia. Vol. IV. With 582 Illustrations, 22 of them in colours. London: W. B. Saunders Co. 1908. Pp. 1194.

THE volume before us is the fourth of that monumental work known as "Keen's Surgery." In the production of this volume the distinguished editor has had the assistance of Professor DaCosta. The subjects included in this volume are Hernia, the Surgery of the Rectum and Anus, Genito-Urinary Surgery, the Surgery of the Intestines, the Vermiform Appendix, the Surgery of the Eye and Ear, Military Surgery, Naval Surgery, and Tropical Surgery; while the concluding chapter is on "The Influence of Race, Sex and Age in Surgical Affections," by Professor William L. Rodman. The contributors include such men as W. B. Coley, Robert Abbe, Joseph Ransohoff, Bransford Lewis, Arthur T. Cabot, Hugh Young, Arthur Dean Bevan, W. Van Hook, J. B. Murphy, and E. B. Deuch. Such names as those quoted are a sufficient indication of the excellence of the manner in which the subjects for which they are responsible are treated. Each subject is really a concise, yet complete, treatise or monograph in itself. Where all sections are so admirably treated we do not wish to make invidious comparisons by singling out anyone in particular for praise or the reverse. In connection with the surgery of the rectum and anus, however, we think a few diagrams illustrative of the actual development of the regions concerned would have assisted the reader very considerably in understanding the occurrence of the developmental defects. In a similar

manner, a few more illustrations added to illustrate the text in connection with the treatment of rectal cancer would have added much to the educational value of the subject; indeed, the description of the various operative procedures for the removal of rectal cancer is rather meagre to be really instructive. The Surgery of the Prostate is very ably described by H. H. Young. As one would naturally expect, the author supports and advocates the perineal method of prostatic enucleation, and his results would go far to support his advocacy of his own method of procedure. To those not experienced in that method of enucleation we are of opinion the operation would not be quite so easy as it seems from the author's description of it, nor do we think the results would be anything like so brilliant in the hands of others as they are in Professor Young's hands. We feel certain there would be more cases of urinary incontinence than Mr. Young seems to have. His description of the entire subject leaves nothing to be desired. The section on intestinal obstruction is somewhat disappointing. It is deficient both in quantity and quality, and is the one blot in an otherwise excellent chapter on the surgery of the intestines. The Surgery of the Vermiform Appendix is written by J. B. Murphy. Need we say more to show that it is of the highest excellence? His advice as to when one should operate is sound and worthy of quoting:— "The danger of operative intervention in the early stage (within thirty-two hours) is scarcely more than that of an exploratory laparotomy. . . . This is the time *par excellence* for operation. To me there appears to be no excuse, no explanation, no logical process for, no justifying hope in, delay in this disease. Procrastination," he says, "cannot be regarded as a manifestation of knowledge, experience, judgment, or true conservatism." This chapter is, without doubt, the best and most eminently practical in the volume, and it is beautifully and amply illustrated. The concluding sections are devoted mainly to specialists, branches such as the surgery of the ear and eye, tropical and military surgery.

The closing chapter, from the pen of Professor

Rodman, deserves a word of special commendation. This volume is an excellent addition to its predecessors, and well maintains their high standard of excellence.

Manual of Diseases of the Ear, including those of the Nose and Throat in relation to the Ear. For the use of Students and Practitioners of Medicine. By Thomas Barr, M.D., and J. Stoddart Barr, M.B., Ch.B. Fourth Edition, entirely revised and largely re-written. With three Coloured Plates and 215 Illustrations. Glasgow: James MacLehose & Sons. 1909. Pp. 504. Medium 8vo.

This standard manual is so well known to all otologists, and as we have had an opportunity on several previous occasions of expressing our high appreciation of its merits, it is unnecessary here to go into details. Suffice it to say that Dr. Thomas Barr has always seen to it that his manual was well up-to-date, and the present handsome volume is fully worthy of the reputation which previous editions had earned. The intention expressed in the preface to the first edition—"to present the main facts of aural surgery in a form sufficiently concise and methodical to meet the wants of general practitioners and students of medicine"—has been successfully adhered to.

The rhinological part has been entirely re-written and brought up-to-date: so also have the two chapters on the intracranial and vascular complications of purulent inflammation of the middle ear. The subjects of labyrinthitis and otosclerosis receive special attention as befits their importance, and forty-five coloured figures have been introduced which greatly enhance the value of the work.

On the whole it is hard to name any other book on the ear so satisfactory for the use of students and practitioners.

The St. Louis Medical Society. Collection of Reprints by Medical Writers. St. Louis, U.S.A. 1909. 8vo. Pp. 15.

The St. Louis Medical Society has determined to start a collection of reprints of papers written by members, and

in the event of copies of such papers not being obtainable to keep a record of the title with the date and medium of publication. Already a goodly number of such papers and records have been obtained, and the Society has determined to enlarge the sphere of its action. At the annual meeting held in December last the Society decided to include in the collection reprints of papers of all reputable American writers and monographs by eminent professional men abroad. The Society will be glad to receive copies of such papers, and such may be sent to the secretaries, Nathaniel Allison or Arthur C. Kimball, The St. Louis Medical Society, St. Louis, U.S.A.

Quain's Elements of Anatomy. In Four Volumes. Vol. III., Neurology. Part I., containing the General Structure of the Nervous System and the Structure of the Brain and Spinal Cord. By E. A. Schäfer, F.R.S., and J. Symington, F.R.S. London: Longmans, Green & Co. 1908.

As it is fifteen years since the last edition of the part of "Quain's Anatomy dealing with the Central Nervous System" was published, the numerous additions which have been made to our knowledge of the subject have necessitated the introduction of much new matter and the re-writing and re-arrangement of a large part of the older text. Professors Schäfer and Symington, who are responsible for this volume, have used the greatest care, and have produced a most excellently balanced account of the general structure and mode of development of the elements of the nervous system and of the special structure of the spinal cord and brain. An enormous amount of information has been brought together in one volume, and yet the descriptions are so clearly given, and the matter is so well arranged, that it is by no means difficult to find what is required. Many extremely interesting figures illustrating the fine structure of the elements of the nervous system have been introduced from the works of Cajal, Dogiel and others, and are thus made accessible to English-speaking students. Probably the chapters deal-

ing with the minute anatomy of the nervous system will be most frequently consulted, for the work is essentially a work of reference rather than a students' text-book. Medical students are necessarily compelled to depend upon shorter and less exhaustive descriptions, but Quain's volume will be invaluable to teachers and others desiring special information.

The account of the macroscopic structure of the spinal cord and various parts of the brain are clear and easily followed, and the illustrations are in many cases striking and most instructive. Some of the best figures in the book are those illustrating macroscopic dissections and sections of the brain.

In one small particular we venture to think that the best course has not been followed. We have become so used to Weigert and Weigert-Pal sections that the enlarged photographic views (Figures 138-147) of sections of the spinal cord and of the brain-stem, in which the various parts have been left unstained, seem at first sight strange and indefinite. In the case of many structures, such as the inter-olivary fibres, the nucleus ambiguus, the fasciculus solitarius, and the dorsal longitudinal bundle, it can scarcely be doubted that a better idea would have been given by drawings, or photographs, of stained sections. The attempt to show the grey and white matter in natural contrast has not been, we believe, of advantage.

By carefully restricting the amount of space devoted to controversial matter room has been found to refer to many interesting fields of investigation. The vast subject of the differences in structure of the cerebral cortex in the nervous regions of the brain is touched upon, and an interesting illustrated account is given based upon the work of Flechsig, Campbell, Elliott Smith and others. As our knowledge of the functions of the cerebral cortex depends so largely upon experimental work carried out upon the brains of apes, it is very satisfactory to find that a chapter of ten pages is devoted to an illustrated description of the cerebral hemispheres of Primates.

It is intended that the second part of Volume III. shall be devoted to the descriptive anatomy of the nerves and

sense organs, and that it, together with the present part, shall form a complete text-book of neurology.

The editors and publishers are to be congratulated upon the publication of the first instalment of what we anticipate will prove the most useful reference work upon neurology in the English language.

Golden Rules of Anæsthesia. By R. J. Probyn-Williams, M.D.; Senior Anæsthetist at the London Hospital. "Golden Rule" Series, No. XIV. Third Edition, revised. Bristol: John Wright & Sons, Ltd. 1909. 24mo. Pp. 67.

If anything could convert us to a liking for medical books of this class it would be the admirable way in which Dr. Probyn-Williams has written the one before us. That we are not singular in this opinion is evident from the fact that the book has gone through two former editions since 1904. Books of this class must be judged by what they contain rather than by what they omit, for much that is of the first importance on the subject must necessarily be omitted. Judged on this standard we have nothing but praise for the book. The rules are one and all admirable. They are clearly and tersely expressed, and the student may rely on them as a perfectly sound, if not a perfectly complete, guide to the administration of anæsthetics. We regret that the author has not seen fit to recommend the use of ether by the open method, at all events as an alternative to the change to chloroform during a long administration. We have often found this a most valuable method, and believe that by it many of the objections to the use of ether are removed. The method is especially valuable when anæsthetising children and old people.

T. P. C. K.

T. E. K. A. par libro. 1909. Eldonita de la Tutmonda Esperantu Kuracistu Asocio. Dresden: Adolf Thalwitzer. 1909.

We have received the first Year Book of the Universal Medical Esperanto Association. It is well printed, and

has as frontispiece the most recent photograph of Dr. Zamenhof, the inventor of the language. The report of the hon. secretary shows that there were over 425 members in the first four and a half months of the existence of the Association, and we are informed that over 200 have since joined. The list of the members include medical men from practically every corner of the globe. The report of the International Committee of the Red Cross on the Fourth (Dresden) Congress strongly recommends Esperanto to all Red Cross Associations. Dr. Thalwitzer was able to demonstrate its usefulness by means of a section of thirty men of the Saxony Red Cross, to whom he had given ten lessons. They gave an interesting ambulance display, the orders, questions and answers being in Esperanto.

Reference is made to the Esperanto section which is being organised for the International Medical Congress to be held at Buda-Pesth in August next.

The volume concludes with an article on Medical Terminology by Dr. Uhlmann, of Huttwie, Switzerland. There are some familiar friends among the advertisements. The production of this issue has been entirely due to the generosity of Dr. Thalwitzer.

RECENT WORKS ON IMMUNITY.

1. *Studies on Immunisation, and their application to the Diagnosis and Treatment of Bacterial Infections.* By Sir A. E. Wright, M.D., F.R.S.; Director of the Department for Therapeutic Immunisation, St. Mary's Hospital, London; late Professor of Pathology, Army Medical School, Netley. London: Archibald Constable & Co., Ltd. 1909. Pp. xvi + 490.

2. *Studies on Immunity.* By Robert Muir, M.A., M.D.; Professor of Pathology, University of Glasgow; in collaboration with Carl H. Browning, M.D., Alexander R. Ferguson, M.D., and William B. M. Martin, M.B., Ch.B. London: Henry Frowde, Oxford University Press; Hodder & Stoughton. 1909. Pp. xii + 216.

1. We feel certain that this collection of twenty-seven papers bearing directly on immunity, and published by Wright

and his co-workers during the past twelve years, will receive a hearty welcome. The book is divided into two parts. In Part I. are papers dealing with the anti-bacterial elements of the blood fluids—*i.e.*, with agglutinins, bactericidins, and opsonins. Amongst the papers on opsonins are included four by Bulloch and his pupils. In Part II. are eleven papers dealing with what the author states to be "the real subject-matter of the book—*i.e.*, with the problem of fighting bacterial infection by those defensive agencies which the organism itself employs when it contends with microbic invasion." Descriptions of technique have been omitted from all the papers. Otherwise they are given as originally published, with the exception of the last three papers, which deal with vaccine therapy and therapeutic immunisation.

These papers have been revised in accordance with the author's present views. Most people would, however, have preferred a single complete exposition of the subject of vaccine therapy and therapeutic inoculation rather than a revised edition of three papers covering the same ground, and, consequently, largely made up of repetition. The author has in the preface anticipated criticism of this nature, and pleads that unfamiliar facts and doctrine are best assimilated by a series of expositions such as are here furnished.

Taking Wright's work as a whole the most striking feature is an endeavour, as rare as it is welcome, to apply laboratory results to Practical Medicine. Such an attempt, in the eyes of many, appears to be unpardonable, as it implies a training which seems impossible to those who practise empirical and rule of thumb methods.

Whatever criticism may be passed upon the author's views it is certain that there has been no work of recent years which has given such an impetus to the study of immunity as the work of Wright and Douglas on opsonins and the practical use made of them in the effort to cure bacterial diseases.

Investigations on the subject have been made in every country in the civilised world. Reports have been furnished of the successful application of the method of treatment by bacterial vaccines to almost every disease of

known bacterial origin. Naturally, however, there has been a considerable amount of adverse criticism, much of which is very reasonable.

In the excellent index which is provided references are given therefrom to all the controversial parts, so that it is quite easy to look up, without loss of time or temper, the author's views on disputed points.

A considerable number of critics obscure the issue, and look upon Wright's use of the opsonic index as the essential element in his work, forgetting, or else not recognising, that the fundamental principle of his teaching is the induction of immunity by means of bacterial vaccines. Such critics declare the method of determining the opsonic index to be wholly unreliable. For the purpose of illustration we may point out that one surgeon performs a particularly difficult operation with a mortality of, say, 5 per cent., while similar patients at the hands of another surgeon suffer a mortality of, say, 50 per cent. Hence it is quite easy to believe that in some hands the method of determining the opsonic index may give grossly inaccurate results—results which are not the fault of the method, but rather of the worker. We may point out that it was sufficiently accurate in the author's hands to enable him to point out a way which goes far towards solving the question of how to fight bacterial infection. The work done in this regard by the author will entitle his name to be placed on a level with those of the two great workers (Metchnikoff and Ehrlich), to whom this volume is dedicated.

2. These "Studies in Immunity" comprise a number of papers, in some part revised, which have been published in various journals during the past six years. This volume, although not appealing to so large a circle as the preceding one, will, without doubt, be welcomed by the select few who are interested in the fascinating, though intricate, problems associated with Immunity.

Part I., dealing with the properties of hæmolytic serums, includes an introduction and four sections relating to Immune Bodies, Complements, Anti-Immune Bodies, and the Hæmolytic Receptors of the Red Blood

Corpuscles. Part II. deals with Deviation of Complement, and Part III. with Opsonic and Bactericidal Action.

During the period of six years covered by the papers included in this volume a very great amount of work relating to immunity has been produced and published. The difficulty to keep abreast of such work is very great. As a consequence, the majority of those who wish to keep abreast cannot afford to read back numbers, unless, indeed, they are epoch-making. We think the older papers in this volume would be much more useful and far more widely read had due reference been given to the work of others up to the time of the present publication instead of stopping short at the date of the first publication. Professor Muir has himself in part attempted to remedy this by introducing certain addenda. He might have gone much further in the same direction, and in doing so have secured for these Studies a much larger audience.

Of all the papers the most interesting—and this mainly because the most recent—are those in Part III. In their papers on Opsonic Action the authors find that the opsonin of normal serum is thermolabile, and is absorbed by an emulsion of any organism; while the opsonin of immune serum is thermostable, and is absorbed only by the specific organism. Hence they look upon these as two different classes of substances.

We are glad to notice that Professor Muir does not support the appropriation by Neufeld of the word "bacteriotropin" as indicating immune opsonin, and also that he objects to Neufeld's suggestion to restrict the term "opsonin" to the thermolabile substance, as the term "opsonin . . . can only be used as signifying a property of a substance, not its constitution." As a matter of fact, the expression "bacteriotropic substances" had, almost ten years previously, been introduced and applied by Wright as a generic term for a class of substances which combine chemically with bacteria, and hence Neufeld's proposed use of the word leads only to confusion.

The volume closes with a section on the Bactericidal Action of Normal Serum, followed by a useful account of the General Properties of Complements.

There is no index, but the table of contents is fairly full.

PART III.

MEDICAL MISCELLANY.

Reports, Transactions, and Scientific Intelligence.

ROYAL ACADEMY OF MEDICINE IN IRELAND.

President—J. Magee Finny, M.D., F.R.C.P.I.
General Secretary—James Craig, M.D., F.R.C.P.I.

SECTION OF SURGERY.

President—J. Lentaigne, P.R.C.S.I.
Sectional Secretary—A. J. Blayney, F.R.C.S.I.

Friday, February 19, 1909.

Mr. Seton F. Pringle in the Chair.

Œsophageal Diverticulum.

Mr. William Taylor read the notes of a case of œsophageal diverticulum, which he had removed from a gentleman in June, 1908. The patient was fifty-four years of age, and his symptoms dated back for about twenty years. The symptoms had been gradually getting worse. Food was usually regurgitated into the mouth just as it had been eaten, sometimes almost immediately, at other times after several hours. Not unfrequently portion of the previous night's supper was regurgitated next morning while in the bath. Pills taken at night were frequently regurgitated unchanged next morning. A feeling of fullness and discomfort after eating was generally referred by the patient to the right side of the neck, about the level of the hyoid bone. Attempts to pass bougies failed—their passage being arrested about nine inches from the teeth, but their passage seemed to be arrested more from spasm of the œsophagus than from encountering any other source of obstruction. There was no swelling to be detected on inspection of the neck. [A beautiful radiogram of the pouch filled with bismuth food was taken by Dr. Watson and shown

at the meeting, as well as the pouch itself. Through the "screen" before the photo was taken each bolus of food the patient attempted to swallow was seen passing into the pouch.] The pouch took its origin from the left side of the œsophagus just at its junction with the pharynx, and passed downwards behind the œsophagus, to terminate at a point just below the supra-sternal notch. The diverticulum was removed through an incision extending from the hyoid bone along the anterior border of the left sterno-mastoid muscle to the sterno-clavicular articulation. The anterior belly of the omohyoid muscle and the superior thyroid vessels were divided. The lateral lobe of the thyroid gland, which was considerably enlarged, was displaced, after which the diverticulum was readily seen and withdrawn, there being no adhesions. Two small intestinal clamps were applied, and the diverticulum was removed by dividing between them. The opening into the œsophagus was closed by three rows of fine silk sutures. A small tube was passed from the centre of the wound in the neck down to the region of the sutured œsophagus, and a piece of gauze loosely packed around it. About three-quarters of the neck-wound was closed. The wound healed by first intention, unless where the drainage had been applied, but even that was healed up by the end of twelve days. There was never at any time any sign of leakage from the œsophagus. Nourishment by the mouth was withheld for four days. Rectal salines, with raw meat juice, were administered every six hours. Nourishment was given by the mouth on the eighth day, and gradually increased in amount and in consistency until a lamb chop was easily partaken of on the sixteenth day. The patient is now in perfect health, and has no difficulty in swallowing.

Mr. Taylor then briefly discussed the literature of the subject.

The Chairman said the case was one of the first, if not the first, of such cases reported to the Academy. He wished to know if the œsophagus had been examined since with the bougie, and if the spasm had disappeared.

Dr. Magee Finny said the patient was under his observation for some years, and as far back as 1903 it was thought he had something of a pouch about his throat. It was a great worry to him, and seemed reflexly to produce nervous irritation and dyspeptic phenomena. One could not forecast how long it would be safe to allow a patient who had a diverticulum to pass without operation. It was interesting how the diverticulum could swell

out and prevent a tube passing, and yet did not prevent the taking of food and drink. At his suggestion, Dr. Watson tried a meal of bread and milk for making a radiograph, and obtained excellent results. The same method had been tried on a patient approaching eighty years of age, and the radiograph which he exhibited showed a pouch corresponding to that in the former case. A later picture showed a lateral increase, and he would have another one taken shortly. They gave her the same mixture as Mr. Taylor used, and they could see it on the screen catching in the pouch and slipping down behind it.

Dr. M'Vittie referred to a case of dilatation of the œsophagus, brought about by spasm, in which the patient was dying of starvation. By the use of Russell's œsophageal stricture dilator, which he exhibited, the patient was completely cured.

Mr. L. G. Gunn said he had a case which seemed an ordinary case of carcinoma of the œsophagus. He did a gastrostomy, and did not think the patient would live long. Thirteen months afterwards he saw him again, looking well, and having put on weight. He then thought he had a diverticulum obstructing the gullet. Dr. Woods examined the case with the œsophagoscope, and snipped away a small portion of the stricture, which proved to be a carcinoma.

Mr. R. A. Stoney mentioned a case in which the diagnosis lay between malignant disease and some simple stricture of a syphilitic nature. He opened the stomach, which was small and adherent, and fed him with a tube from the mouth to the stomach. Later he had to do a duodenostomy, and lost sight of the case afterwards.

Mr. Taylor, in reply, said he had not passed a bougie since the operation was done. The condition was not usually noticed until a surgeon questioned the patient, when it was not infrequently found that the symptoms began about thirty to forty years of age. His patient dated his symptoms back twenty years. Œsophageal pouches of a pressure type were met with always at the junction of the pharynx and œsophagus, and he was convinced that, unless in extreme cases, the shadows in a radiograph would not extend below the pericardiums.

Supra-pubic Prostatectomy.

Mr. L. G. Gunn read a paper on complications following on supra-pubic prostatectomy. He detailed his experience of the operation, and mentioned especially as complications fistula,

impotence, persistent cystitis, formation of stone, persistence of some frequency of micturition, impaired power of the compressor urethral muscle, and uræmia.

The Chairman recalled a troublesome case of fistula, and thought it was not wise to tie in the catheter. A fistula would close rapidly, but as soon as the catheter was taken out the scar tissue would re-contract. For a few days after operation he generally used suction apparatus. He had come to look on hiccough in a prostatectomy case as a sure precursor of death.

Mr. Wm. Taylor said he had recently been thinking whether they were not foolish in sticking to the suprapubic method, and not removing the prostate by the perineal route. Mr. Young's statistics showed 110 cases done in succession without a single death, and in 146 cases there was only one death. His own mortality was 8 per cent. to 10 per cent. He looked on the use of scissors as more or less unsurgical even under one's eye, and to use them blindly did not appeal to him. Among the complications following the operation he had seen senile gangrene arising, he believed, from a weak heart. He had also seen pelvic cellulitis follow, and he had seen a patient die apparently of hæmorrhage and shock. He had found that cases in which he did not use suction apparatus did as satisfactorily as the ones in which suction was required. He now used nothing but a pad of wool, and the results were satisfactory. He looked on hiccough as a sign of uræmia, and consequently a fatal sign.

Mr. Gunn, in reply, said the less appliances they had the better. He thought it was hardly fair to take the statistics of one man, who was an expert at an operation, and selected his cases carefully. American statistics were not as good as the general English statistics, and impotence and troubles of a similar kind must be more frequent after the perineal than after the suprapubic operation. He thought it was better surgery to pass a curved scissors and cut through the sutures than to drag them with the finger. In two cases of Bottini's operation which he had seen the results were completely satisfactory.

Friday, March 19, 1909.

Mr. E. H. Taylor in the Chair.

Lateral Pharyngotomy.

Mr. P. J. Dempsey exhibited a case of lateral pharyngotomy.

The patient had consulted him for hoarseness. He had no pain, but his voice got tired more easily than it ought, and he had a sensation of something in his throat. On examination, by merely depressing the tongue on the right side, the beginning of a small pear-shaped swelling was to be seen, corresponding almost identically to the posterior pillar of the fauces. The growth was found to extend down into the epiglottis. On palpation there was evidence of fluid, and it appeared to be a branchial cyst. The patient, who had to use his voice in preaching, decided to have an operation. If the cyst were branchial, it would probably have diverticula in various directions, and could not be got at from the inside. He therefore thought it best to take it away from without. The operation was performed on November 26 as if it was a lateral pharyngotomy, although the pharynx was not opened. When he opened the cyst, about two tablespoonsful of clear fluid came out. The wall of the cyst was curetted and packed with gauze, which was kept in for forty-eight hours, and then removed and a drainage-tube inserted. The tube was kept in about a week. No fluid came, and there were no signs of the cyst refilling. The recovery was uneventful. He had pain on swallowing after the operation which disappeared in a few days. He had no trouble since with his voice.

Mr. E. H. Taylor said the two main things in a case of the kind were thorough asepsis and the complete removal of the cyst wall. Both had been fully accomplished in this case.

Extirpation of the Larynx : New Apparatus for Voice Production.

Mr. R. H. Woods exhibited a case of extirpation of the larynx, with new apparatus for voice production. The patient, a man aged forty-two, had consulted him two months ago complaining of pain in swallowing. On examination there was a large tumour, occupying the right half of the larynx and extending up to the middle line, which proved, on microscopic examination, to be a squamous carcinoma. Eight weeks ago, assisted by the Chairman, he opened the region of the carotid sheath and dissected out obviously carcinomatous glands. The glands were adherent, and a couple of inches of the internal jugular vein were excised on the right side. After a preliminary tracheotomy the larynx was opened, and as there was little chance of a hemilaryngotomy curing the case, the whole larynx was extirpated. The trachea was sutured to the skin, and the sack of the pharynx completely cut off from com-

munication with the respiratory tract. In order to enable the patient to speak, it occurred to him that he might be able to convert the sound made by a reed into speech. Accordingly, he fixed a reed in a tube. By putting it into the nose and dropping it over the soft palate, and by putting the other end into the trachea he was able to blow and make the reed vibrate. A valve was used to take in the air, and when he had his chest full he put his finger to the end, and the air was pressed into the tube. Mr. Woods then inserted the instrument, and the patient, after a salutation to the section, counted from one to ten.

Mr. Dempsey said the case showed the results that could be obtained in laryngectomies when the pharynx was cut off from the respiratory tract. The real success of such a case was due to the avoidance of the danger of pneumonia, which killed nine out of ten patients formerly. Professor Glück had performed twenty-one complete laryngectomies in the past year or two, and had not had a single death. It was too soon, however, to judge of the question of recurrence.

Mr. W. L. Murphy suggested the trying of a smaller tube.

Mr. E. H. Taylor said he was much struck with the comparative ease with which Mr. Woods was able to close the pharyngeal tube.

Mr. A. J. Blayney inquired as to the effect of the operation on the man's hope of life. Horses which were tracheotomised improved for a time, but after a while went rapidly to the bad.

Mr. Stokes asked if the patient could cough.

Mr. Woods, in reply, said there was no trouble in getting a pharyngeal wall; even after the larynx was taken away there was plenty of wall to complete a very good tube. Before doing the extirpation he thought it wise to give the patient an anti-streptococcus vaccine so as to raise his opsonic index, and his temperature only rose to 100° for two days, and then fell to normal. This was, under the circumstances, remarkable, and he thought some of the credit was due to the preliminary vaccination. The tube was sufficiently small to pass through the nose, and a smaller one would require a smaller reed, which would give less power to the voice. He had had a case of tracheotomy about fifteen years ago, and the man was in the best of health though still wearing a tube. The man before them could make a respiratory effort capable of clearing off any secretion in his windpipe. He was fed after the operation by a tube through his nose. This was kept until he was able to swallow, about ten days afterwards.

Rhinolith.

Mr. W. L. Murphy exhibited a rhinolith removed from a woman. It was wedged underneath the inferior turbinal, and was easy to get out. The discharge ceased immediately. The composition of the rhinolith was calcium carbonate and phosphate, with some organic substance resembling cellulose.

Mr. A. J. Blayney said he did not see the exact origin of a rhinolith where there was no nucleus of a foreign body, or that any small body, such as a piece of mucus, should remain in the nose such a long time as to make a nucleus.

Ectopic Hydronephrotic Kidney.

Mr. E. H. Taylor exhibited an ectopic hydronephrotic kidney removed from a young woman about a fortnight ago. The clinical symptoms were strongly indicative of appendicitis. On palpation over her right iliac fossa he was able to determine deep fluctuation, and as she appeared to be very ill he decided to operate that evening, and to cut down over the fluctuating area with local anæsthesia. He was surprised to reach the parietal peritoneum without any evidence of pus. When he opened it, his finger passed over a surface that was bigger than a normal cæcum, and he thought it might be an ovarian cyst with a twisted pedicle. He extended the incision under chloroform, but found no pedicle. He punctured a large swelling which was fluctuating and tense, and a quantity of fluid escaped. The tissue at the edge of the opening was evidently renal. He put a tube into the kidney and drained the hydronephrosis, and after ten days removed the kidney, having previously satisfied himself that the left kidney was healthy. The case showed that even where all typical features of appendicitis were present, they might come on a case that had nothing whatever to say to either the cæcum or appendix.

Mr. Haughton said his experience of local anæsthesia was that when they got to the peritoneum they came on extremely sensitive material.

Dr. Peacocke said he saw the girl only three days before he sent her into hospital, and he never was more positive in his life that he was dealing with appendicitis. He had great hopes, from past experience, that the girl would live a long life with only one kidney.

Mr. A. J. Blayney said the frequency with which appendicitis was met with made them tend to come to the conclusion that

most right-side pains were due to it ; but he had seen a fair number of cases which proved to be otherwise. He had operated on somewhat similar cases as regards the pathological findings, though the symptoms were not the same. In one case there were oxalate of calcium stones, which had probably excited a considerable amount of inflammatory reaction, and led to narrowing of the ureter.

Mr. Taylor, in reply, said the strength of novocain used in Berne was one tabloid dissolved in 10 c.c. of sterile water. He had used it approximately at that strength, but often weaker. When getting down through the muscles towards the parietal peritoneum he always injected freely, and tried to produce œdema of the extra-peritoneal tissue. There was some pus mixed with the urine in the distended pelvis. After the operation the temperature rose to 100°, but the morning after the pain had gone, and the temperature fell to normal and remained so. She had practically healed, and was perfectly well.

Sarcoma of the Orbit and Jaw.

Mr. W. S. Haughton exhibited a specimen of sarcoma of the orbit and upper jaw from a girl aged about twenty-eight. For six months she had suffered from discomfort and pain in the region, and prominence of the eye ball was noticed. She had a good deal of œdema. For a month the growth of the tumour had been rapid and the pain considerable, and the case seemed hopeless. The girl was blind. On operating he found that the muscles were involved, and he decided to sacrifice them and the branches of the facial nerve. As a preliminary measure he ligatured the external carotid artery, and thus controlled and limited the hæmorrhage. The roof of the antrum and the floor of the orbit were penetrated by the tumour. They had to enucleate the eyeball, and found underneath a mass of sarcomatous tissue. The septic condition following such an operation was a great trial, as food particles and sloughing tissue decomposed in the mouth. He irrigated the cavity with saline fluids at frequent intervals : every half hour for forty-eight hours the mouth was washed out copiously. She had very little rise of temperature, almost no decomposition in the mouth ; she had practically no pain, and an uneventful convalescence.

Carcinoma of Breast in a Male removed by Halsted's Method.

Mr. Haughton also exhibited a specimen of carcinoma removed from the male breast by Halsted's method. The diagnosis had to

be taken without prejudice, as it had not yet been confirmed microscopically. The patient was a farmer, aged fifty-six. In the course of his work, one leg of a ladder, on which was a man weighing fourteen stone, came on his chest. Afterwards he noticed pain in the right pectoral muscle, and a few months ago a tumour appeared in the region of the nipple with a slight discharge. The tumour grew to the size of a small walnut, and was extremely hard. He had a few hard glands in the axilla. The operation was the ordinary typical one described by Halsted. It was the first cancer in the male breast he had seen, while he had seen 200 to 300 cases of cancer of the female breast.

Mr. E. H. Taylor said that in performing excision of the upper jaw he had performed a preliminary laryngotomy and plugged the pharynx, and found that he could proceed leisurely without the risk of blood entering the air-passages. In his experience such cases were uniformly bad as regard recurrence. When malignant growths developed outwards, metastases were slower, and prognosis was better than when they penetrated deeply.

Mr. A. J. Blayney said it might be well to consider the suggestions thrown out by Coley. In cases of sarcoma he used the fluid called after his name, and he had published a number of cases which had survived for long periods without recurrence. The carcinoma was the third he had heard of in the male breast. He would give them the proportion of one to 100 in the female breast.

Mr. Stokes said he had seen two cases previous to the one before them.

Mr. Haughton, in reply, said he arranged the posture so that gravity would act away from the respiratory passage, which would do a good deal to prevent the inspiration of blood and septic particles.

SECTION OF OBSTETRICS.

President—E. H. Tweedy, F.R.C.P.I.

Sectional Secretary—H. Jellett, M.D., F.R.C.P.I.

Friday, March 5, 1909.

The President, Dr. E. H. Tweedy, in the Chair.

Fibro-cystic Myomatous Uterus.

Dr. Alfred Smith exhibited a large fibro-cystic myomatous uterus taken from a patient, thirty-eight years of age, who in-

formed him that she had never felt any inconvenience up to some months before her admission to hospital, when she noticed she was getting rather stout. She was sent to him with a provisional diagnosis of ovarian cyst, and the clinical features were identical with the phenomena obtained in that condition. On opening the abdomen he thought he had to deal with an ovarian cyst, but to his astonishment he found a fibro-myoma which had undergone the degeneration seen in the specimen, giving a uniform pearly whiteness.

Dr. E. H. Tweedy said the specimen illustrated the difficulty gynæcological diagnosis. A big fibro-cystic tumour was indistinguishable from ovarian cyst in a great number of cases. In examining *per rectum* they could occasionally feel an ovarian pedicle, and if it was absolutely distinguished the diagnosis of ovarian cyst was made, but its absence was no proof that they were not dealing with an ovarian cyst.

Dr. Smith, in reply, said he did not make any rectal examination, as the case seemed perfectly simple and straightforward.

Uterus with Large Cyst of Gaertner's Duct attached.

Dr. Alfred Smith exhibited also a uterus with large cyst of Gaertner's duct attached. Twelve years previously he had removed what was called an ovarian cystoma from the other side of the patient. She afterwards complained of another enlargement. He opened to remove the cyst, and found that when he was dissecting it out from the broad ligament it seemed to extend right down into the vagina. When he separated it as far as he could he found that the uterus had no support, and he removed it along with the cyst.

Dr. E. H. Tweedy said he had operated on similar tumours, and had experienced the greatest difficulty in enucleating them, as they not only went deeply into the pelvis and vagina, but climbed up under the peritoneum.

Obstetrical and Gynæcological Reports of the Rotunda Hospital.

Dr. E. H. Tweedy read the Obstetrical and Gynæcological Reports of the Rotunda Hospital.

On the proposal of Dr. Alfred Smith, seconded by Dr. Neil, the discussion of the Reports was postponed till next meeting of the Section.

A STUDY OF URIC ACID.

By Dr. I. P. Chrom, Physician to the Kommunehospital, Copenhagen.

An account of the experiments made by Dr. I. P. Chrom, physician to the Kommunehospital, Copenhagen, with the object of throwing light on the intricate problem of uric acid has been concluded in the current number of *Nordiskt Medicinskt Arkiv.*

We are indebted to Mr. Grenville Grove, now in Stockholm, for the following summary of Dr. Chrom's paper, which was originally published in the Danish *Hospitalstidende* a year ago :—

Dr. Chrom had had his attention arrested by the phenomenon of crystals of uric acid in the urine. It has long been established that the greater part of the uric acid in the system is oxidised and eliminated through the lungs. The question which has been puzzling scientists is how to account satisfactorily for the fact that the system fails to oxidise the small amount which is excreted in the urine. That it must in some way or other be *bound* by combination with certain bodies is obvious enough ; the question is what are these bodies, and in what way do they bind it ? Dr. Chrom thought that an investigation into the cause of the crystallisation might throw light on this problem. He reasoned as follows :—Let us assume, as we might expect *à priori*, that the crystallisation is due to an increase of uric acid. If then, we can discover what bodies promote the crystallisation, this would be tantamount to discovering what the bodies are which bind the uric acid in such a way as to prevent its oxidisation and bring about its increased excretion.

The author accidentally stumbled upon the discovery that creosote promoted the crystallisation. Now creosote contains bodies which form *sulphovinic acid.* It must be these bodies, then, he argues, which bring about an increased excretion of uric acid.

Dr. Chrom now began to experiment with sulphovinic acid. Here he was at once confronted by another difficulty. Should he work with the absolute quantity of sulphovinic acid or the relative, that is its proportion to sulphuric acid? The arguments falling out in favour of the latter course, he proceeded to examine the urine of healthy persons for the proportion, which he designates as *A.B.*, noting the while whether crystals of uric acid occurred or no.

He found that crystals of uric acid appeared with almost any value of *A.B.*, but that they were particularly liable to occur

with the low values (under 4.8), except in *the case of patients who had been treated with alkalies.* This exception furnished a valuable clue. For if alkalies prevent the crystallisation, it was but a step to the conclusion that acids promote it. Another series of experiments in which the substance administered was phenol, served to corroborate the author's hypothesis. The crystals occurred when *A.B.* was low; when not, they failed to appear. It was now definitely established that the phenomenon was really due to bodies which form sulphovinic acid.

The next question was, *in what way* did these bodies act? Three possibilities were conceivable—(1) That the sulphovinic acid combinations precipitated the uric acid; (2) that the amount of uric acid was increased; (3) that there was an increased acidity.

Repeated experiments, varied in every possible way, showed that the sulphovinic acid combinations had no such power of precipitation. It was also found that the quantity of uric acid need not be increased either absolutely or per cent.

On the other hand, several facts go to show that an increase of acidity promotes the crystallisation (*e.g.*, mineral acid, 40 gr. mixt. acid sulph.). But it is the acidity in a physico-chemical sense rather than the titrometrical acidity on which the crystallisation depends. The crystallisation appears with different degrees of rapidity, although the titrometrical acidity remains constant. The more dissociable the acid is, the sooner does the crystallisation appear.

Now how was this acid formation brought about? Experiments had shown that when phenol was introduced into the system, only *half* of it seemed to be coupled—at any rate when large doses were given. Could it be that the uncoupled half was oxidised into acid?

The experiments, however, did not bear out this view. For when only small quantities of phenol were coupled, the crystals of uric acid did not appear. The uncoupled part must, therefore, as in fact Tauber has shown, be oxidised into carbolic acid and eliminated through the lungs. There is no other alternative then but to suppose that the *coupling process itself* is accompanied by a formation of acids, a group of atoms being probably split off which is either an acid or is oxidised into one. In other words, before the coupling we have H_2SO_4, and after it $\frac{R}{H}>SO_4$ and H—x, where H—x signifies an unknown monobasic acid. How-

ever, it is difficult to imagine that the physico-chemical acidity can be greater after the coupling than before it. For one of the two resulting hydrogen atoms—and probably the other also—is found in an organic acid which is far less dissociable than sulphuric acid. Thus none of the three possibilities put forward above seemed to hold good.

Dr. Chrom was for some time completely nonplussed. One day, however, his attention was arrested by the fact that salicylic acid is not able to precipitate *all* the uric acid of the urine. Thus uric acid might be divided into two groups, a precipitable and a non-precipitable one, or as Klemperer terms them, "free" and "bound."

Here the second possibility—an increase of uric acid—emerges at once into the foreground. It is quite conceivable that there may be an increase of the precipitable acid and a decrease of the non-precipitable, so that the total result perhaps shows a decrease. But if phenol can split off precipitable uric acid in coupling, it is natural to conclude that the same is the case with all the other acids of the sulphovinic group.

The author conceives the process as taking place in the following :—A molecule of sulphuric acid (H_2SO_4) is replaced by a molecule of sulphovinic acid $\left(\frac{R}{H}>SO_4\right)$ and a molecule of a monobasic acid ($H-x$), which latter, it is held, is uric acid. For uric acid, though nominally monobasic, is so weakly so that it can, for all practical purposes, be regarded as monobasic. Thus, for every molecule of sulphovinic acid which is formed there is also formed one molecule of uric acid. But sulphovinic acid, as we know, is formulated as $BaSO_4$. We thus get the equation $\frac{168}{233}=\frac{Ur}{BaSO_4}$, or, as it may more conveniently be expressed $Ur=BaSO_4\frac{168}{233}$.

Dr. Chrom now proceeded to compare the value thus calculated with the values actually found. Abandoning the Ludwig-Salkowsky method as complicated and unsatisfactory, he used ammonium chloride to precipitate the urine. The results showed an average error of 0.0024 gr. of uric acid. *The calculated and found values coincided in no less than ten cases.* This could not possibly be a mere coincidence. Moreover, Dr. Chrom succeeded in two cases in finding coinciding values more than once in the

same subject. He notes the interesting fact that in these latter cases the urine was of a beautiful straw colour, whereas in the other cases it was of a cloudy beer colour.

The conclusions at which Dr. Chrom arrives as the result of his series of experiments are :—

(1) That the fate of the purin kernels in the economy seems to depend on the combinations in which they happen to be presented to the economy, or which they form by the action of certain bodies.

(2) That the experiments with phenol show that the coupling of phenol in the system causes the formation of an acid, and that this acid is uric acid.

(3) That the fact that the quantity of uric acid and the quantity of sulphuric acid excreted as sulphovinic acid in not a few cases are related to each other as their molecule numbers, warrants us in concluding that the quantity of uric acid excreted in the urine is wholly or partially determined by the quantity of the bodies of the sulphovinic group which couples itself with sulphuric acid in the economy.

STEENSMA'S TEST FOR FREE HYDROCHLORIC ACID.

F. A. Steensma publishes in the *Biochemische Zeitschrift*, 1908, p. 210, a modification that he has devised in Günsburg's test for free hydrochloric acid in the gastric juice. The method is similar to Günsburg's, but the reagent is as follows :—Phloridzin, 2 grammes ; vanillin, 1 gramme ; absolute alcohol, 30 cc. A drop of this solution is placed in a small porcelain capsule, which floats on a boiling water bath ; when the alcohol has evaporated there remains a faint yellow ring on the capsule. One or two drops of the strained gastric contents are placed in the centre of this ring, by means of a glass rod, in such a way that the liquid is in contact with the internal edge of the ring. If free hydrochloric acid is present, a bright red band is formed at this internal edge of the ring ; when the amount of free hydrochloric acid is minute, the red band is reduced to a mere line. The water bath is essential to the success of the test, just as it is in Günsburg's reaction. Steensma's reagent does not keep good for more than a short while. The absolute alcohol may be replaced by methyl alcohol, and this renders the test still more delicate, but at the same time the solution is so much less stable that it should be freshly prepared each time.—*The Journal of Clinical Research*, May, 1909.

SANITARY AND METEOROLOGICAL NOTES.

Compiled by Sir John Moore.

Vital Statistics.

For four weeks ending Saturday, May 22, 1909.

IRELAND.

The average annual death-rate represented by the deaths—exclusive of deaths of persons admitted into public institutions from without the respective districts—registered in the week ended May 22, 1909, in the Dublin Registration Area and the twenty-one principal provincial Urban Districts of Ireland was 22.1 per 1,000 of their aggregate population, which for the purposes of these returns is estimated at 1,142,308. The deaths registered in each of the four weeks ended Saturday, May 22, and during the whole of that period in the several districts, alphabetically arranged, correspond to the following annual rates per 1,000. In some cases, owing to deaths not having been registered within the week in which they occurred, the rates do not fairly represent the weekly mortality :—

Towns, &c.	Week ending				Average Rate for 4 weeks	Towns, &c.	Week ending				Average Rate for 4 weeks
	May 1	May 8	May 15	May 22			May 1	May 8	May 15	May 22	
22 Town Districts	20.6	18.3	18.7	22.1	19.9	Lisburn -	22.7	36.4	27.3	13.6	25.0
Armagh -	27.5	13.7	13.7	34.4	22.3	Londonderry	18.1	14.5	15.7	16.9	16.3
Ballymena	23.9	19.2	4.8	19.2	16.8	Lurgan -	35.4	26.6	39.8	13.3	28.8
Belfast -	19.0	18.3	19.6	24.3	20.3	Newry -	29.4	21.0	12.6	8.4	17.9
Clonmel -	35.9	—	25.6	10.3	18.0	Newtownards	5.7	17.2	22.9	17.2	15.8
Cork -	21.9	19.2	19.2	27.4	21.9	Portadown -	10.3	10.3	5.2	15.5	10.3
Drogheda -	12.3	8.2	20.4	4.1	11.3	Queenstown	13.2	33.0	—	39.6	21.4
Dublin - (Reg. Area)	22.0	18.8	18.5	22.3	20.4	Sligo -	14.4	4.8	28.8	4.8	13.2
Dundalk -	12.0	16.0	19.9	4.0	13.0	Tralee -	47.6	15.9	10.6	21.1	23.8
Galway -	31.1	3.9	15.5	11.7	15.6	Waterford -	15.6	29.2	27.3	27.3	24.8
Kilkenny -	4.9	39.3	9.8	19.7	18.4	Wexford -	9.3	14.0	18.7	32.7	18.7
Limerick -	24.6	12.3	13.7	19.1	17.4						

The deaths (excluding those of persons admitted into public institutions from without the respective districts) from certain epidemic diseases registered in the 22 districts during the week ended Saturday, May 22, 1909, were equal to an annual rate of 1.6 per 1,000, the rates varying from 0.0 in thirteen of the districts to 13.7 in Armagh—the 5 deaths from all causes for that district including 2 from whooping-cough. Among the 180 deaths from all causes for Belfast are 9 deaths from whooping-cough, one from diphtheria, 2 from diarrhœal diseases, and one from cerebro-spinal fever. The 40 deaths from all causes for Cork include one from typhus and 4 from whooping-cough. Among the 14 deaths from all causes for Waterford one is from whooping-cough. Among the 7 deaths from all causes for Wexford 2 are from diarrhœal diseases, and among the 4 deaths from all causes for Ballymena there is one death from measles.

DUBLIN REGISTRATION AREA.

The Dublin Registration Area consists of the City of Dublin as extended by the Dublin Corporation Act, 1900, together with the Urban Districts of Rathmines, Pembroke, Blackrock, and Kingstown. The population of this area is 398,356, that of the City being 306,902, Rathmines 36,567, Pembroke 28,506, Blackrock 8,759, and Kingstown 17,622.

In the Dublin Registration Area the births registered during the week ended Saturday, May 22, 1909, amounted to 248—117 boys and 131 girls; and the deaths to 176—92 males and 84 females.

DEATHS.

The deaths registered represent an annual rate of mortality of 23.0 in every 1,000 of the population. Omitting the deaths (numbering 6) of persons admitted into public institutions from localities outside the Area, the rate was 22.3 per 1,000. During the twenty weeks ending with Saturday, May 22, the death-rate averaged 25.9, and was 1.7 below the mean rate for the corresponding portions of the ten years 1899–1908.

The total deaths from all causes include 4 deaths from whooping-cough, one death from diphtheria, 4 deaths from enteric fever, and 5 deaths from influenza. In each of the 3 preceding weeks, deaths from whooping-cough had been 13, 4, and 5; deaths from diphtheria had been 0, 0, and 0; deaths from enteric

fever had been 0, 0, and 2; and deaths from influenza had been 3, 3, and 4.

There were 2 deaths from lobar pneumonia, 5 from broncho-pneumonia, and 9 from *pneumonia* (not defined).

Of 28 deaths from all forms of tuberculous disease, 17 were from tubercular phthisis (*phthisis*), 3 were from tubercular meningitis, and 8 were from other forms of the disease. In each of the 3 preceding weeks tuberculous diseases caused 33, 29, and 21 deaths.

There were 2 deaths from carcinoma, and 4 from cancer, malignant disease (undefined).

The deaths of 4 infants were attributed to prematurity.

Diseases of the brain and nervous system caused the deaths of 15 persons, including 2 infants under one year of age, and one aged 15 months from *convulsions*.

There were 26 deaths from diseases of the heart and blood vessels, and 21 deaths from bronchitis.

Four deaths were attributed to accident or negligence, and one death by suicide occurred.

In 3 instances the cause of death was "uncertified," there having been no medical attendant during the last illness. These cases were all of infants under one year of age.

Forty-nine of the persons whose deaths were registered during the week were under 5 years of age (34 being infants under one year, of whom 15 were under one month old) and 52 were aged 60 years and upwards, including 22 persons aged 70 and upwards, of whom 5 were octogenarians, and 2 (females) were stated to have been aged 90 and 93 years, respectively.

The Registrar-General points out that the names of the cause of death printed above in italics should be avoided whenever possible in Medical Certificates of the Cause of Death.

STATE OF INFECTIOUS DISEASE IN THE DUBLIN REGISTRATION AREA AND IN BELFAST.

The usual returns of the number of cases of infectious diseases notified under the "Infectious Diseases (Notification) Act, 1889," as set forth in the following table, have been furnished by Sir Charles A. Cameron, C.B., M.D., Medical Superintendent Officer of Health for the City of Dublin; Mr. Fawcett, Executive Sanitary Officer for Rathmines and Rathgar Urban District; Mr. Manly, Executive Sanitary Officer for Pembroke Urban District; Mr.

Heron, Executive Sanitary Officer for Blackrock Urban District; Dr. R. A. O'Donovan, Medical Superintendent Officer of Health for Kingstown Urban District; and Dr. Bailie, Medical Superintendent Officer of Health for the City of Belfast.

TABLE SHOWING THE NUMBER OF CASES OF INFECTIOUS DISEASES notified in the Dublin Registration Area (viz.—the City of Dublin and the Urban Districts of Rathmines and Rathgar, Pembroke, Blackrock, and Kingstown), and in the City of Belfast during the week ended May 22, 1909, and during each of the preceding three weeks. An asterisk (*) denotes that the disease in question is not notifiable in the District.

CITIES AND URBAN DISTRICTS	Week ending	Small-pox	Measles	Rubella, or Epidemic Rose Rash	Scarlet Fever	Typhus	Relapsing Fever	Diphtheria	Membranous Croup	Pyrexia (origin uncertain)	Enteric or Typhoid Fever	Erysipelas	Puerperal Fever	Varicella	Whooping-cough	Cerebro-spinal Fever	Total
City of Dublin	May 1	–	0	0	5	–	–	5	–	1	4	19	–	0	*	1	35
	May 8	–	0	*	9	–	–	7	–		8	10	–	*	*	0	34
	May 15	–	0	*	9	–	–	6	–	2	15	8	–	0	*	*	40(a)
	May 22	–	*	*	5	–	–	5	–	4	12	4	–	*	0	*	30
Rathmines and Rathgar Urban District	May 1	–	0	0	3	–	–	–	–	–	–	–	–	*	0	*	3
	May 8	–	*	*	4	–	–	1	–	–	–	–	–	0	*	0	5
	May 15	–	0	*	10	–	–	4	–	–	–	1	–	*	*	0	15
	May 22	–	*	*	5	–	–	11	–	–	1	–	–	0	0	*	17
Pembroke Urban District	May 1	–	2	–	1	–	–	–	–	–	1	–	–	*	13	–	17
	May 8	–	–	–	1	–	–	–	–	–	–	1	–	*	14	–	16
	May 15	–	2	–	–	–	–	–	–	–	1	–	–	*	13	–	15
	May 22	–	1	–	–	–	–	2	–	–	1	2	–	*	18	–	24
Blackrock Urban District	May 1	–	0	0	–	–	–	–	–	–	–	–	–	*	*	–	–
	May 8	–	0	*	–	–	–	–	–	–	–	–	–	*	*	–	–
	May 15	–	0	0	–	–	–	–	–	–	–	–	–	*	0	–	–
	May 22	–	*	0	–	–	–	–	–	–	–	–	–	*	0	–	–
Kingstown Urban District	May 1	–	*	*	–	–	–	–	–	–	–	–	–	0	*	*	–
	May 8	–	*	*	–	–	–	–	–	–	–	–	–	0	*	*	–
	May 15	–	*	*	–	–	–	–	–	–	–	–	–	0	*	*	–
	May 22	–	*	*	–	–	–	–	–	–	–	–	–	0	*	0	–
City of Belfast	May 1	–	0	*	5	1	–	3	–	–	2	3	–	*	*	–	16
	May 8	–	*	*	3	–	–	2	–	1	1	5	–	*	*	–	12
	May 15	–	0	*	3	–	–	–	–	2	2	4	1	0	0	3	15
	May 22	–	0	0	2	–	–	3	–	–	–	2		0	0	1	8

(a) Not including 2 cases of cerebro-spinal fever reported during the week ended May 15.

CASES OF INFECTIOUS DISEASES UNDER TREATMENT IN DUBLIN HOSPITALS.

During the week ended May 22, 1909, 8 cases of measles were admitted into hospital, 7 were discharged, there was one death, and 30 cases remained under treatment at its close.

Eleven cases of scarlet fever were admitted to hospital, 10 were discharged, and 78 cases remained under treatment at the close of the week. This number is exclusive of 20 convalescents from

the disease under treatment in Beneavin, Glasnevin, the Convalescent Home of Cork Street Fever Hospital.

There was no case of typhus under treatment in hospital during the week.

Eleven cases of diphtheria were admitted to hospital, 5 were discharged, there were 3 deaths, and 33 patients remained under treatment at the close of the week.

Ten cases of enteric fever were admitted to hospital, 7 were discharged, there was one death, and 40 cases remained under treatment in hospital at the close of the week.

In addition to the above-named diseases, 13 cases of pneumonia were admitted to hospital, 8 were discharged, there were 2 deaths, and 39 cases remained under treatment at the end of the week.

ENGLAND AND SCOTLAND.

The mortality in the week ended Saturday, May 22, in 76 large English towns, including London (in which the rate was 14.0), was equal to an average annual death-rate of 14.7 per 1,000 persons living. The average rate for 8 principal towns of Scotland was 17.5 per 1,000, the rate for Glasgow being 17.1 and for Edinburgh 17.2.

INFECTIOUS DISEASE IN EDINBURGH.

The Registrar-General has been favoured by A. Maxwell Williamson, M.D., B.Sc., Medical Officer of Health for Edinburgh, with a copy of his Return of Infectious Diseases notified during the week ended May 22. From this report it appears that of a total of 36 cases notified, 9 were of phthisis, 17 were of scarlet fever, 8 of diphtheria, one of erysipelas, and one of cerebro-spinal fever.

Among the 322 cases of infectious diseases in hospital at the close of the week were 129 cases of scarlet fever, 61 of whooping-cough, 49 of phthisis, 39 of diphtheria, 20 of measles, 8 of erysipelas, 5 of chicken-pox, 4 of cerebro-spinal fever, one of enteric fever, and one of puerperal fever.

Meteorology.

Abstract of Observations made in the City of Dublin, Lat. 53° 20′ N., Long. 6° 15′ W., for the Month of May, 1909.

Mean Height of Barometer,	30.057 inches
Maximal Height of Barometer (13th, at 9 a.m.),	30.355 ,,
Minimal Height of Barometer (26th, at 9 a.m.),	29.224 ,,
Mean Dry-bulb Temperature,	52.1°.
Mean Wet-bulb Temperature,	47.8°.
Mean Dew-point Temperature,	43.4°.
Mean Elastic Force (Tension) of Aqueous Vapour,	.287 inch.
Mean Humidity,	72.9 per cent.
Highest Temperature in Shade (on 21st),	72.7°.
Lowest Temperature in Shade (on 2nd),	33.1°.
Lowest Temperature on Grass (Radiation) (2nd),	30.0°.
Mean Amount of Cloud,	43.3 per cent.
Rainfall (on 12 days),	1.470 inches
Greatest Daily Rainfall (on 17th),	.377 inch
General Directions of Wind,	E., W.

Remarks.

This month presented two sharply defined types of weather—during the first half the distribution of atmospheric pressure was mainly anticyclonic, the neighbourhood of Iceland being the region of highest barometer. Easterly and northerly winds prevailed, the dryness amounted to a drought, and a large diurnal range of temperature was observed—at Nairn, on the 5th, the thermometer fell 40° in a few hours, from a maximum of 72° to a minimum of 32° during the following night. This was due to the remarkable absence of cloud which permitted free solar and terrestrial radiation. On the 12th a temporary break in the weather occurred, clouds and showers taking the place of sunshine—hail, sleet or snow fell in some districts. Winter and summer met in the third week—16th to 22nd—the first three days being cold as in mid-winter, the last four days being in all respects summerlike. On the 24th an unsettled period, with abundant rainfall, set in, the distribution of atmospheric pressure changing to a cyclonic type, which lasted to the close.

In Dublin the arithmetical mean temperature (52.6°) was 0.4° above the average (52.2°). The mean dry-bulb readings

at 9 a.m. and 9 p.m. were 52.1°. In the forty-five years ending with 1909, May was coldest in 1869 (M. T. = 48.2°), and warmest in 1893 (M. T. = 56.7°). In 1908 the M. T. was 55.2°.

The mean height of the barometer was 30.057 inches, or 0.068 inch above the corrected average value for May—namely, 29.989 inches. The mercury rose to 30.355 inches at 9 a.m. of the 13th, and fell to 29.224 inches at 9 a.m. of the 26th. The observed range of atmospheric pressure was, therefore, 1.131 inches.

The mean temperature deduced from daily readings of the dry-bulb thermometer at 9 a.m. and 9 p.m. was 52.1°, or 4.9° above the value for April, 1909—47.2°. Using the formula *Mean Temp.* = *Min.* + (*Max.* — *Min.*) × .47, the value is 52.2°, or 0.4° above the average mean temperature for May, calculated in the same way, in the thirty-five years, 1871–1905, inclusive (51.8°). The arithmetical mean of the maximal and minimal readings was 52.6°, compared with a thirty-five years' average of 52.2°. On the 21st the thermometer in the screen rose to 72.7°—wind, S.W.; on the 2nd the temperature fell to 33.1°—wind, calm. The minimum on the grass was 30.0°, also on the 2nd.

The rainfall amounted to 1.470 inches, distributed over 12 days. The average rainfall for May in the thirty-five years, 1871–1905, inclusive, was 1.970 inches, and the average number of rainy days was 15. The rainfall was, therefore, considerably below, while the rainy days were also below, the average. In 1886 the rainfall in May was very large—5.472 inches on 21 days; in 1869, also, 5.414 inches fell on 19 days. On the other hand, in 1895, only .177 inch was measured on but 3 days. In 1896 the fall was only .190 inch on 7 days. In 1908, 1.374 inches fell on 21 days.

A solar halo appeared on the 16th, 19th, 22nd and 24th. A lunar halo was seen on the 2nd, a lunar corona on the 2nd and 29th. High winds were noted on only 2 days, and never attained the force of a gale. Hail fell on the 17th. Aurora borealis was seen on the night of the 14th, and lightning on that of the 31st.

The mean minimal temperature on the grass was 41.9°, compared with 45.2° in 1908, 41.6° in 1907, 41.9° in 1906, 42.5° in 1905, 42.6° in 1904, 44.3° in 1903, 40.3° in 1902, 41.7° in 1901, and 37.6° in 1894. The maximum reached or exceeded 70° on 2 days, but never fell short of 50°. The absolute maximum was 72.7° on the 21st.

The rainfall in Dublin during the five months ended May 31st amounted to 10.098 inches on 75 days, compared with 10.078 inches on 95 days in 1908, 9.499 inches on 81 days in 1907, 11.592 inches on 97 days in 1906, 9.026 inches on 81 days in 1905, 11.741 inches on 92 days in 1904, 12.560 inches on 95 days in 1903, 9.973 inches on 81 days in 1902, 7.724 inches on 67 days in 1901, 5.971 inches on 70 days in 1896, and a thirty-five years' average of 10.040 inches on 81 days.

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At the Normal Climatological Station in Trinity College, Dublin, the observer, Mr. Wm. J. Good, returns the mean height of the barometer as 30.060 inches, the highest reading observed being 30.352 inches at 9 a.m. of the 13th, the lowest, 29.230 inches at 9 a.m. of the 26th. The arithmetical mean temperature was 52.4°, the mean dry-bulb reading at 9 a.m. and 9 p.m. being 52.5°. Rain fell on 12 days to the amount of 1.422 inches, .372 inch being measured on the 17th. The number of hours of bright sunshine registered by the Campbell-Stokes sunshine recorder was 231.5, giving a daily average of 7.5 hours. The corresponding figures for May, 1904, were 192.5 hours and 6.2 hours; for 1905, 215.7 hours and 7.0 hours; for 1906, 132.5 hours and 4.3 hours; for 1907, 173.9 hours and 5.6 hours, and for 1908, 193.9 hours and 6.3 hours respectively. The mean earth-temperature at 9 a.m. was 52.3° at a depth of one foot below the surface, 50.0° at 4 feet. The corresponding values for 1908 were 53.5° and 50.0°. The lowest temperature on the grass (terrestrial radiation) was 25.5° on the 2nd. The highest temperature in the shade was 73.5° on the 21st; the lowest was 34.0 on the 2nd and 15th.

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At Knockdolian, Greystones, Co. Wicklow, the rainfall measured by Mr. R. Cathcart Dobbs, J.P., was 2.165 inches distributed over 12 days—.425 inch falling on the 24th, and .400 inch on the 17th. The total fall since January 1st, 1909, equals 11.395 inches on 61 days, compared with 9.775 inches on 64 days in 1908, 10.62 inches on 69 days in 1907, 11.665 inches on 66 days in 1906, 9.611 inches on 67 days in 1905, 12.027 inches on 84 days in 1904, 15.655 inches on 79 days in 1903, 11.750 inches on 68 days in 1902, and 11.205 inches on 65 days in 1901.

Mr. A. Victor Price measured 1.37 inches of rain on 11 days at

Clonsilla, Greystones, Co. Wicklow. The heaviest fall in 24 hours was .38 inch on the 24th. The mean temperature was 50.6°—highest being 73° on the 21st, lowest 33° on the 15th.

Dr. Arthur S. Goff returns the rainfall at Lynton, Dundrum, Co. Dublin, at .90 inch on 10 days, compared with 1.75 inches on 20 days in 1908, 3.66 inches on 16 days in 1907, 2.74 inches on 21 days in 1906, 1.42 inches on 11 days in 1905, 2.46 inches on 18 days in 1904, 2.86 inches on 18 days in 1903, 3.26 inches on 22 days in 1902, and 1.09 inches on 10 days in 1901. The greatest daily measurement was .25 inch on the 24th. There were hail showers on the 14th. The temperature in the shade ranged from 34° on the 2nd to 73° on the 20th and 21st. The mean temperature of the month was 53.6°, compared with 56.2° in 1908, 51.1° in 1907, 51.8° in 1906, 54.5° in 1905, 53.3° in 1904, 53.1° in 1903, 50.5° in 1902, and 52.6° in 1901.

Mr. Robert O'Brien Furlong, C.E., reports that the rainfall at Cloneevin, Killiney, Co. Dublin, was 1.20 inches on 10 days, .28 inch being measured on the 24th. The average rainfall in May at this station in the 24 years, 1885–1908, inclusive, was 2.136 inches on 13.8 days. Since January 1, 1909, 9.48 inches have fallen on 71 days. Hail showers occurred on the 14th and 17th.

Dr. Launcelot T. Burra reports that the rainfall at the Royal National Hospital for Consumption, Newcastle, Co. Wicklow, was 1.15 inches on 10 days, the greatest fall in 24 hours being 0.245 inch on the 30th. The screened thermometers ranged from 69.9° on the 22nd to 32° on the 2nd. The mean temperature at 9 a.m. and 9 p.m. was 51.3°.

Dr. C. Joynt, F.R.C.P.I., returns the rainfall at 21 Leeson Park, Dublin, at 1.230 inches on 11 days, .375 inch being measured on the 26th.

Mr. T. Bateman returns the rainfall at The Green, Malahide, Co. Dublin, at 1.528 inches on 11 days, compared with 1.427 inches on 17 days in 1908, 3.200 inches on 18 days in 1907, and 3.174 inches on 19 days in 1906. The greatest rainfall in 24 hours was .425 inch on the 24th. No rain fell during the first 11 days. The extremes of temperature in the shade were—highest, 68°, on the 30th; lowest, 29°, on the 1st. The mean temperature was 49.9°.

Mr. W. Miller registered 1.80 inches of rain at Cork on 12 days. The greatest fall in 24 hours was .67 inch on the 24th. The rainfall was 0.38 inch in defect of the average for May. The

rainfall of the first five months of 1909 was 15.08 inches, or 0.14 inch less than the average.

The Rev. Arthur Wilson, M.A., writing from Dumanway Rectory, Co. Cork, states that 2.96 inches of rain fell there on 11 days, .84 inch being measured on the 24th and .60 inch on the 30th. There was drought from the 3rd to the 16th inclusive. Severe night frosts on the 2nd and 18th.

At the Ordnance Survey Office, Phœnix Park, Dublin, rain fell on 12 days to the total amount of 1.123 inches, the largest measurement being .355 inch on the 24th. The duration of bright sunshine was 249.9 hours, of which 13.8 hours occurred on the 7th, 8th, and 9th, respectively, and 14.0 hours on the 11th.

TYPHOID BACILLI IN SPUTUM.

Lung complications of severity during typhoid fever are not very common; nevertheless they occur with sufficient frequency to make them of decided clinical importance. Their bacteriology has been investigated by Dr. Stefanelli, in Florence, and he finds that out of fifteen patients suffering from typhoid fever and from intercurrent lung trouble, as follows:—Severe diffuse bronchitis, 2 cases; broncho-pneumonia, 10 cases; lobar pneumonia, 3 cases, the sputum contained the *Diplococcus pneumoniæ* in every instance, and the *Bacillus typhosus* in six out of the fifteen. The importance of this from the point of view of the modes of spread of the disease is obvious—it must be dangerous to have a case of typhoidal pneumonia coughing in proximity to another patient's bed. It is also of importance from the point of view of treatment; for the vaccine treatment of pneumonia requires a precise knowledge of the bacteriology of the lung trouble in each individual case. It is hardly possible, if both pneumococci and typhoid bacilli are present in the same sputum, to say for certain which is causing the bronchitis or the pneumonia; but the diplococcus is very common as an ingredient of normal sputum, whereas the typhoid bacillus is not likely to be adventitious. The point needs further investigation, but it seems likely that in a case where sputum contains both pneumococci and typhoid bacilli, the latter are the cause of the lung trouble, and a pneumococcal vaccine would be unlikely to do much good.—*The Journal of Clinical Research*, May, 1909.

PERISCOPE.

DUBLIN HOSPITALS' TUBERCULOSIS COMMITTEE.

A MEETING of the Committee was held on Friday, May 21st, at 76 Grafton Street, Dublin. Present:—Her Excellency the Countess of Aberdeen, Sir John Moore (in the Chair), Sir Arthur Chance, Dr. M. F. Cox, Dr. H. C. Drury, Dr. A. R. Parsons, Dr. G. Peacocke, Dr. Percy Kirkpatrick, Dr. J. Lumsden and the Hon. Secretary, Sir William J. Thompson. The three months' work done by the two special nurses to look after poor consumptive patients in their own homes, placed at the services of the Committee by the Women's National Health Association, a summary of which follows, was considered to be most satisfactory. The amount of relief given to the parents and their families, in the way of nourishment, clothes, beds, &c., reflects the greatest credit on the Samaritan Committee, whose work in this direction is so commendable and practical. The following is a summary of the work done by two Tuberculosis District Nurses in Dublin for three months—February to May, 1909:—

No. of Cases attended, which includes the number of cases on hands at the beginning of the Quarter and those notified during the Quarter—198 (69 new cases). Of these 21 died; the remainder are under treatment or have been dealt with as follows:—		
,,	Visits paid	1,953
,,	Average weekly attendances	150
,,	Cases notified from the Hospitals	22
,,	,, otherwise notified	47
,,	,, improved so much that they were able to return to work again	5
,,	,, sent to the Royal National Hospital, Newcastle, Co. Wicklow	7
,,	,, sent to South Dublin Union for special Tuberculosis Treatment	5
,,	,, waiting to be admitted to Newcastle Hospital	5

No. of Cases sent to other Sanatoriums	- -	—
,, ,, gone, or sent, to friends in the country	-	8
,, ,, admitted to North Dublin Union Hospital	-	6
,, ,, admitted to South Dublin Union Hospital		1
,, ,, admitted to the Hospice for the Dying	-	12
,, ,, attended who have been at Newcastle Hospital	- - - -	5
,, ,, sent to the country to convalesce	- -	6
,, Deaths at patients' home	- - -	14
,, ,, in Institutions	- - - -	7
,, Families removed to more healthy homes	-	5
,, Rooms disinfected	- - - -	31
,, Insanitary houses reported	- - -	1
,, Sputum flasks distributed	- - -	21
,, Families received nourishment	- - -	52
,, Patients who received clothes, shoes, bedding, &c.		50
,, Families for whom rent is being paid while the breadwinner is at Newcastle or in the Dublin Unions	- - - - -	5
,, Children of parents suffering from Tuberculosis sent to the country through Fresh Air Fund	-	—
,, Children boarded out, while the mother is in hospital	- - - - -	1
,, Patients or their families for whom work has been obtained	- - - - -	6
,, Children sent to Schools or Institutions after parent's death	- - - -	1
,, Each family, rough average	between	6 & 7
,, Families occupying one room	- - -	48
Average Weekly Income	- - 16/6	
Average Weekly Income when bread-winner is ill, about	- - 6/6	
,, Families on books in which there is more than one member affected	- - - -	31

THE ROYAL COLLEGE OF SURGEONS OF EDINBURGH.

At a meeting of the College held on May 19, 1909, the following gentlemen were elected Fellows:—James Malcolm Christie, M.B., Ch.B., Edinburgh; John Gilmour, M.B., Ch.B., Edinburgh; Ralph Tennyson Jupp, M.B., Ch.B., Ilford, Essex; Angus Dugald MacIntyre, M.D., C.M., Canada; John Stevenson Mitchell,

M.B., Ch.B., Dunfermline; George Raffan, M.B., Ch.B., Edinburgh; Henry Speirs, M.D., Gavinton, Duns.; Cyril Hocken Tewsley, M.B., Ch.B., Bradford; and Reginald William Townley, L.R.C.S.E., Portobello, Edinburgh. The Bronze Medal and Microscope presented to the College by Colonel William Lorimer, Bathgate, in memory of his late father, William M'Phune Bathgate, F.R.C.S.E., Lecturer on Materia Medica in the Extra Academical School, was awarded, after the usual competitive written examination in Materia Medica, &c., held for the Session 1908-1909, to Miss Marion Macintyre, 15 Buccleuch Place, Edinburgh. The first annual award of the Ivison Macadam Memorial Prize in Chemistry, consisting of a Bronze Medal and Case of Instruments, was, after a competitive written examination in Chemistry, held for the Session 1908–1909, made to Mr. Charles Henry Kemball, 29 Brougham Street, Edinburgh.

NEW PREPARATIONS AND SCIENTIFIC INVENTIONS.

Synoptic Chart of Cardiac Examination.

This chart, arranged by John D. Comrie, M.A., B.Sc., M.B., is intended for the use of both general practitioners and students. It consists of a cardboard sheath stamped with an outline of the chest and heart, inside of which there slides a sheet of cardboard. Upon the latter are printed the names of the various diseases that affect the heart, together with their physical signs. By the simple manipulation of two tapes, the different diseases are made to show in a space at one side of the chart, and, as each disease appears, its various signs automatically come into place at openings corresponding to the areas of auscultation, the borders of the heart, the situation of the pulse, &c. Fuller information regarding the symptoms and physical signs of cardiac disease are given in a twelve-page pamphlet contained in an envelope upon the back of the chart; and this pamphlet comprises in brief most of what is correctly taught regarding the physical signs of disease in the organ in question. It is hoped the chart will prove valuable to the junior student of Clinical Medicine in the simplification of physical signs, which at first he is apt to find very bewildering; also to the senior student preparing for examination who desires a handy and concise memoriser; as well as to the general practitioner, who often wishes for a quick method of referring to the possible meaning

of a given physical sign. The chart will be published shortly by Bale, Sons & Danielsson, Ltd.

Flavoured Sanatogen.

In the notice of this preparation, which appeared in the number of this Journal for June, 1909 (Vol. CXXVII., page 468), there is an error, for the occurrence of which we express our regret. It is stated that the flavouring agent is vanilla, whereas as a matter of fact it is a special form of pure lemon oil.

Medicated Biscuits.

Messrs. L. Hanniman & Son, 1 Park Parade, Harlesden, London, N.W., have recently introduced a digestive biscuit which is at once palatable and effectual. Each biscuit contains fifteen grains of magnesium oxide, so that it is an agreeable antacid preparation suitable for women and children, and, indeed, for delicate persons of either sex. As an antacid, one biscuit may be eaten after each meal. When three or four are eaten at bedtime, or on arising in the morning, they act as a mild aperient. These biscuits were awarded a special diploma at the Confectioners' Exhibition held in London in September, 1908. They are sold in tin-boxes at ninepence, two shillings, or four shillings and sixpence a box according to size.

Papine.

Messrs. Battle & Co., St. Louis, Minnesota, U.S.A., claim for this standard pharmaceutical product of *Papaver somniferum* that, unlike most derivatives from, and preparations of, opium, it neither nauseates nor constipates. By means of special methods of preparation the anodyne and analgesic principles of the poppy are so extracted as to free them of the narcotic and convulsive elements in ordinary opium. Papine, further, does not inhibit the secretory functions of the body, and is, therefore, a safe anodyne and hypnotic. There are, of course, many indications for its administration. A teaspoonful (one fluid drachm) of this preparation is equal in anodyne power to one-eight of a grain of morphin. The dose for adults is one teaspoonful. For infants under twelve months old, from two to ten drops, increasing the dose by three or four drops for each successive year of life. It may be given at any hour—with, after, or between meals. In order to obtain the maximal effect, the patient should be kept quiet and, preferably, in a recumbent position.

Very truly yours
D. Hennessy

THE DUBLIN JOURNAL

OF

MEDICAL SCIENCE.

AUGUST 2, 1909.

PART I.

ORIGINAL COMMUNICATIONS.

ART. IV.—*Report on an Outbreak of Scarlatina in Lurgan.*[a]

By J. SINGLETON DARLING, M.D., M.Ch. Dubl., L.M.R.C.P.I.; Fellow of the Ulster Medical Society; Medical Officer of the Lurgan Workhouse Hospital.

As an epidemic of septic throat and scarlatina has recently occurred in this town, and most of the patients were under my care, an account of it, with notes of a few of the cases, may be acceptable.

The first case occurred on April 7, 1909—a lady of thirty-five, who was attacked by scarlatina of moderate severity, as was her brother, who is some years older. Four days later (11th), in a house not far distant, I was summoned to the wife of one of our leading men—a lady of sixty-five, who was very ill with sore throat—her grandchild in the house was developing scarlatina, and a servant was almost as ill as her mistress. Mrs. H.'s tonsils were covered with grey exudation, and the inflammation extended over the soft palate, roof of mouth and pharynx, which were coated with tenacious mucus. Her temperature was 103°. Toxæmia considerable. After an

[a] A Thesis read for the Degree of Doctor of Medicine in the University of Dublin, June, 1909.

anxious few days she convalesced, the servant was not well for two weeks, and the grandchild recovered only after a prolonged and complicated illness. A week after his wife Mr. H., aged sixty-six, who had been kept apart from the others, took sore throat. Next morning he tried to rise, but fell on getting out of bed. He complained of pain in the instep, and I found the joints between the cuneiform and metatarsal bones very tender. His throat looked like his wife's, but was not so painful. Temperature 101.5°. His aspect was dull and heavy, quite unlike the brisk appearance of one of our most successful men. Pulse 120 and weak, and the urine, which had been proved free from it not long before, now contained some albumen. This vigorous man, who boasted he had never been two consecutive days in bed in all his business life, went to the bad so fast that he died after five days' illness of septic poisoning—pneumonia setting in on the fourth day. A nephew, who was staying in the house at the beginning of Mrs. H.'s illness, and had gone home to Belfast, there became very ill with sore throat as the most prominent feature, and a middle-aged charwoman who had not been in contact with the invalids, developed a similar illness, and was seriously affected for a week. Another servant took scarlatina later—probably from infection from the child.

During this fortnight numerous cases of scarlatina occurred, most of them in the same part of the town, but a fair number scattered over its whole area, a much larger proportion of these than usual being adults. These conformed in type to the first—the child's—case, being very severe, the rash long delayed—in a few not appearing for several days—and dark in colour, the sloughing in throat extensive, glandular enlargements, cellulitis, or middle ear suppuration being the rule rather than the exception. I am sorry to say that of fifty cases treated by me in the Fever Hospital four died. In one of the fatal cases death was due to secondary septic throat followed by septicæmia taken during convalescence from the primary disease. No case treated by me or my colleagues in private was fatal.

It was noticeable that but one attack of nephritis occurred, and in few patients was there even a transient albuminuria,

while we had a considerable number who suffered from so-called rheumatism, some of these for a long time, and in a few the heart was affected, while in several instances it has recurred after convalescence.

In the only instance in which a bacteriological examination was made streptococci were apparently the active organisms, being the only pathogenic germs found. In one case polyvalent antistreptococcic serum was injected without effect, but this need not be regarded as evidence against its value, as it was used too late to give it a chance.

The treatment that proved of real value was frequent douching of the nasopharynx with alkaline antiseptic washes, and swabbing the tonsils, &c., with glycerine of carbolic acid. Some patients liked gurgling with weak potass. permang. solution, and most liked sucking "Formamint" tablets. The suppurating ears were syringed with the alkaline lotion, and some cases with hydrogen peroxide. Abscesses were opened as soon as located, and cellulitis was freely incised. The other complications were treated on general principles.

Coincident with the scarlatina outbreak one still more extensive of severe sore throat took place, some of the cases in houses where scarlatina was, some in others where no scarlatina appeared.

The chief interest lies in the cause of the epidemic. It was early recognised that all the cases were in houses supplied by one dairyman, and our very able Medical Officer of Health made a most careful examination of his premises, finding nothing wrong, nor could the Veterinary Inspector find anything wrong with the cows, but as the houses supplied by him in distant parts of the town were singled out, and severe sore throats or scarlatina arose in most of them—indeed he had only recently begun to supply the family where the large number of cases I have narrated took place—there seemed a strong probability that the cause would be found here, and after some weeks it came out that just before the first cases appeared his only child had suffered from what her mother described as "lumps in her throat and a spring rash," but was not seen by a doctor, and the only treatment was some "cooling medicine"

obtained from a chemist. It seems almost a certainty that from this source over seventy cases of scarlatina and a still greater number of serious illnesses had their origin, and at least five persons lost their lives.

There is little likelihood that the disease discovered by Power in the cows concerned in the Hendon outbreak was present, as they were examined by an able veterinary surgeon. It will be remembered that Klein cultivated from three cows a streptococcus, and from the throats of the patients one he believed to be identical, calling it *S. scarlatinæ* and considering it specific to the disease. Later Kurth isolated one in Germany, which he called *S. conglomeratus*, which seems to be the same as that described by Klein. Babinsky and Sommerfeld do not seem to accept this as the specific germ, but consider that a streptococcus which they were unable to separate definitely from others "was intimately concerned in the actual causation of the scarlatinal process."

I am not competent to discuss the varying views of eminent investigators, they agree on one point only—viz., the practically constant presence in the throat of all, and in the blood and tissues of fatal cases, of streptococci. Mervyn Gordon found two, one which he regards as identical with Klein's in uncomplicated attacks and another of the pyogenes type in anginal cases. Andrewes and Horder, and later Cumston, seem to have come to a similar conclusion. So in the epidemic I am reporting the question arises—Was the widespread prevalence of sore throat the evidence of an infection by this pyogenic streptococcus preparing the soil for the more specific *S. conglomeratus?* or are the organisms the same, giving rise in some cases to the disease as we usually see it, and in others to a form modified by the age of the patient or a previous attack of the disease? I think the former view the more probable, and that the relationship between them is similar to that between *B. coli* and *B. typhosus*, where it seems established that *B. coli* first attacks the tissues and the blood clumps cultures of it before the true Widal reaction is obtained. The delay of several days in the appearance of the scarlatina rash in a number of my cases is best explained on the hypothesis that the patient was suffering

at first from infection by the pyogenic coccus, the specific germ developing later, the severe nature of the disease being due to the virulence of this infection breaking down the resistance of the tissues and combining its effects with those of *S. conglomeratus*.

ART. V.—*Clinical Reports of the Rotunda Hospital.*[a] By E. HASTINGS TWEEDY, F.R.C.P.I., Master; with the co-operation of J. R. FREELAND, M.D., L.A.H.; and BETHEL A. H. SOLOMONS, M.B., Univ. Dubl., Assistant Masters.

(*Continued from page 30.*)

PROLAPSE of the cord occurred 12 times. Three children were born alive—2 presenting by the breech and one by the vertex, no interference being necessary. Of the 9 children born dead, the cord was pulseless when discovered in 5 cases. In 2 cases the cord stopped pulsating just before the application of forceps. Of the other 2 cases one was a transverse presentation, admitted with the hand and cord (pulsating feebly) appearing at the vulva, the os being three-quarter dilated. Internal version and extraction failed to deliver a living child. The other case was one of contracted pelvis in which the membranes ruptured 12 hours before admission, the cord and hand prolapsing. Internal version and extraction were extremely difficult, and the child was born dead.

We had 29 cases of twins—both boys 9 times, both girls 7 times, and one of each 13 times. The triplets were all boys.

CASES MENTIONED ABOVE.

Ruptured Uterus.—K. T., aged twenty-eight years, 3-para. Previous labours normal. Admitted April 15th in normal labour, vertex presentation to palpation and vaginal examination. 6 a.m.—pulse and temperature normal; pains regular and strong; head visible at vulva, but not advancing. Manual pressure during pains had been tried; then tight binder applied

[a] Read in the Section of Obstetrics of the Royal Academy of Medicine in Ireland, on Friday, March 5, 1909.

and patient allowed up. No pains. Put to bed. Contour of abdomen markedly changed, and fœtal parts felt immediately under abdominal walls. Pulse rose to 120, but patient never showed any signs of shock. Child and placenta manually delivered from abdominal cavity. Rent involved vaginal vault and lower uterine segment; packed with gauze, which was gradually removed, the last being taken out on the fifth day. Uninterrupted recovery. Child dead. Caput for first vertex.

Ruptured Uterus.—E. F., aged thirty-seven years, 10-para, 5 normal labours, one difficult breech, 3 abortions. Uterus ruptured ten hours before admission, after three hours of normal labour. Patient markedly collapsed on admission. Vaginal examination revealed an occipito-posterior presentation. Forceps applied and head delivered. Impacted shoulders freed by bringing down the arms. Placenta removed from among intestines. Large rent in anterior and lateral fornices involving vaginal vault and lower uterine segment. Packed with iodoform gauze. Extreme collapse requiring vigorous stimulation. Last of gauze removed on fourth day. Uninterrupted recovery.

Forceps.—A. C., aged twenty-seven years, 1-para; admitted Nov. 9, 1907; delivered Nov. 9, 1907. Driven in a cab twenty miles to Rotunda after forceps had been unsuccessfully applied. Admitted with complete tear. Delivered herself easily one and a half hours after admission. Baby had a depressed fracture of right parietal bone due to forceps. This was raised with one blade of bullet forceps. Baby lived twenty-four hours. Primary perineal repair failed, but secondary operation successful.

Myoma and Pregnancy.—K. S., aged thirty-eight years, 1-para; admitted July 15, 1908, with diagnosis of incarceration of retroverted gravid uterus. Retention of urine; large cystic mass in posterior fornix; cervix up behind symphysis. Attempts to shove tumour out of pelvis were partially successful, but retention of urine persisted. Developed fever four days after admission. Three days later abortion induced by dilatation with Frommer's dilators and insertion of two bougies. Twenty-four hours later fœtus came away, but not the placenta, which was removed manually. It was then found that the uterine cavity ran upwards and forwards towards the umbilicus, and was very much stretched out. The pelvis was filled with soft tumour, continuous

with posterior uterine wall and encroaching on the cavity of the uterus. There were two other fibroids on the posterior wall near the fundus. On two occasions had an irregular temperature for a few days. No demonstrable cause for fever found in uterus, but patient had a mild attack of cystitis. Supra-vaginal hysterectomy four weeks after delivery. Uninterrupted recovery.

Pernicious Vomiting.—A. R., aged forty-two years, 12-para; six and a half months pregnant; admitted Sept. 28; delivered Sept. 30. Admitted with history of two days vomiting following a fright. Pulse 140, temperature 99° F. Incessant vomiting in spite of treatment outlined above. Pulse remained above 120. Patient looked extremely ill. The day after admission labour was induced by dilatation of the cervix with Frommer's dilators, followed by bipolar version. Child macerated. Vomiting ceased, and patient began to improve immediately, although delivery did not take place until thirty-six hours later. Uninterrupted recovery.

Chronic Endocarditis: Failure of Compensation.—B. N., aged twenty-eight years, 1-para. Admitted with dyspnœa, cyanosis, rapid, irregular pulse and râles (fine moist) at both bases. Received symptomatic treatment—whisky, strychnin, atropin, digitalin, morphin, oxygen and purgative. Patient fell in labour, and symptoms became more pronounced. Forceps applied when the os was three-quarters open, and child easily extracted. Cervix and perineum both torn. Primary repair with good union. Baby alive. Compensation was restored, and patient went out apparently in good health on June 4, 1908.

Table No. I.—*Maternity Department.*

——	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Total
Total deliveries -	146	152	139	136	174	195	190	211	172	189	163	153	2,020
Total abortions -	5	4	3	4	4	2	3	4	1	4	2	4	40
Not in labour -	19	17	30	33	24	32	35	19	30	32	27	35	333
Total	170	173	172	173	202	229	228	234	203	225	192	192	2,393

TABLE No. II.—*Nature and Number of Cases Treated in the Extern Maternity.*

Total number of Labours	2,199	Adherent placenta	29
Abortions	235	Retained placenta	3
Hydramnios	9	Operations—	
Myxoma chorii	1	Version	26
Presentations—		Forceps	56
Face to pubes	30	Perforation of aftercoming head	2
Face	5	Perforated pelvis	4
Brow	2	Maternal mortality	2
Breech	66		
Transverse	16	Infantile Conditions—	
Twins	31	Anencephalus	2
Prolapse of funis	17	Hydrocephalus	3
Presentation of funis	1	Spina bifida	1
Hæmorrhage—		Congenital absence; neural arches; cervical vertebræ	1
Accidental	8		
Placenta prævia	9		
Post-partum	39		

TABLE No. III.—*Extern Mortality.*

Name	Age and Para	Cause of Death	Time Ill	Remarks
A. R.	25, II.	Septicæmia	Eight days	Placenta expressed with difficulty; manual exploration 2nd day, and pieces of placenta removed. Manual exploration 5th day; uterus empty; developed mania.
C. K.	34, IV.	Shock; *post-partum* hæmorrhage	Died on day of delivery	Very adherent placenta; manual removal; never rallied from shock.

Table No. IV.—*Showing Nature and Number of Cases Treated in Intern Maternity.*

Total admissions	2,393	Eclampsia	12
,, number of labours	2,060	Mania	1
Primiparæ	749	Phlegmasia	1
Abortions	40	Morbidity—	
Miscarriages	14	B. M. A. estimation	5.30
Hydramnios	4	Rotunda estimation	3.64
Hyperemesis	1	Mortality—	
Myxoma chorii	1	Maternal	7
Presentations—		Infantile, died in hospital	22
Face to pubes	38	Stillborn—	
Face	5	Recent	62
Brow	2	Macerated	39
Breech	66	Putrid	3
Transverse	12	Infantile conditions—	
Twins	29	Spina bifida	4
Triplets	1	Cephalhæmatoma	2
Prolapse of funis	12	Secondary hæmorrhage from cord requiring under-pinning	2
Hæmorrhage—		Broken humerus; difficult breech	1
Accidental	6	Musculo-spiral paralysis	1
Unavoidable	8	Congenital absence of radius	1
Post-partum	35	Supernumerary fingers—both hands	2
Lacerated perineum—		Facial palsy (forceps)	1
Primiparæ	330	Hereditary union—3 and 4 toes both feet	1
Multiparæ	97	Paralysis arm, due to traction on head	1
Failure of primary union	20	Anencephalus	1
Rupture of uterus	2	Ophthalmia	3
Hæmatoma of vulva	1	Talipes	2
Adherent placenta	9		
Contracted pelvis	10		
Operations—			
Induction of labour	6		
Version	18		
Forceps	81		
Cæsarean section	1		
Episiotomy	2		

TABLE No. V.—*Accidental Hæmorrhage.*

Name	Age and Para	Variety	Period	Result to Mother	Result to Child	Presentation	TREATMENT
S. D.	30, IV.	External	Term	Recovery	Alive	Vertex	Ruptured membranes; tight binder.
M.A.R.	30, V.	,,	..	,,	Macerated	Breech	Plugged; tight binder; in 2 hours patient in strong labour; plugs removed in 4 hours; os fully dilated; membranes artificially ruptured, and presenting foot brought down.
M. W.	30, VI.	,,	,,	,.	Dead	Vertex	Plugged; tight binder for 5 hours.
M. C.	30, X.	,,	..	,,	Macerated	..	Plugged for 6 hours; tight binder; strong pains until plugs removed; then passed off; no more hæmorrhage; spontaneous delivery in 48 hours.
K. N.	33, V.	,,	8 months	,,	Dead	Breech	Plugged; tight binder for 8 hours; os $\frac{3}{4}$ dilated; hot douche followed immediately by full dilatation; membranes artificially ruptured, and presenting foot brought down.

Table No V.—*continued.*

Name	Age and Para	Variety	Period	Result to Mother	Result to Child	Presentation	Treatment
M. M.	25 II.	External	8 months	Recovery	Alive	Vertex	Unsuccessfully plugged twice; third time plug and tight binder; strong pains; plugs removed in 4¾ hours; membranes ruptured artificially; delivery followed in 2 minutes; child in incubator, and went out alive.

Table No. VI.—*Placenta Prævia.*

Name	Age and Para	Variety	Period	Result to Mother	Result to Child	Presentation	Treatment and Remarks
L. C.	27, III.	Marginal	Term?	Recovered	D.	Vertex	Bi-polar version; examined 5 times before admission; morbid; B. M. A. and Rotunda.
M. C.	21, I.	,,	7 months	,,	A.	Transverse	Bi-polar version; child died shortly after birth.
E. L.	22, I.	Central	8 months	,,	D.	Vertex	Bi-polar version.
M D'A.	45, XIV	,,	,,	,,	,,	Breech	Plugged; later leg brought down.
E. R.	34, VII	Lateral	7 months	,,	A.	,,	Kept in bed after diagnosis made; delivered herself in 5 days naturally.
A. B.	24, I.	Central	7½ months	,,	,,	,,	Foot brought down.
K. O'B.	26, IV.	Lateral	7 months	,,	D. Macerated	Vertex	Bi-polar version.
E. N.	35, VII.	Marginal	Term	,,	D.	,,	Bi-polar version; morbid; B. M. A. and Rotunda.

Table No. VII.—*Contracted Pelves.*

All internal measurements made with Skutsch Pelvimeter.

Name	Age	Para	Pelvic Measurements					Mode of Delivery	Result to Child	Weight of Child	Result to Mother	Remarks
			C. V.	Trans.	Ext. C.	I-C.	I.-S					
A. F.	36	IV.	6·25	—	17.5	25	24	Cæsarean Section	Alive	—	Died	See Mortality Table.
A. W.	24	IV.	8	11	18.5	27	25	Natural	Dead	7½	Recovery	Prolapsed pulseless cord on admission; depressed fracture right parietal bone.
E. B.	24	II.	8·5	10·5	19	27	25	Natural	Alive	7¼	Recovery	Pubiotomy, May, 1907.
A. M'E.	31	I.	6·75	11	18	25	22·5	Induction of prem. labour	Dead	5¼	Recovery	Came up long before term.
J. T.	35	VI.	8·75	—	17	24	23·5	Natural	Alive	8½	Recovery	——
C. G.	20	I.	9	-	16.5	24	20	Natural	Alive	5½	Recovery	Head ballotting above brim until os fully dilated.
K. O'C.	36	X	9	-	21	29.5	27	Internal version	Alive	9¼	Recovery	Head unfixed; os fully dilated. History of previous normal deliveries—vertex and breech.
E. R.	25	I	9	–	17	24	23⅛	Walcher's position. Natural delivery	Alive	6¼	Recovery	Patient in labour 24 hours; head unfixed. Walcher's position, 45 minutes; head fixed, and child born in 3 hours.
N. D.	23	I.	9	12	19.25	29.5	28	Internal version	Dead	7½	Recovery	Membranes ruptured 12 hours before admission. Prolapse of cord and hand.
M. B.	31	IV.	8	11·20	18.5	28.5	26	Forceps	Dead	—	Recovery	

Table No. VIII.—*Forceps.*

Indication	No.	Dead Children	Remarks
Delay in the second stage	75	6	One face presentation; two brow presentations; two persistent occipito-posterior presentations; one child macerated.
Eclampsia - -	1	0	—
Prolapse of cord -	2	2	In both cases cord stopped pulsating before forceps was applied.
Contracted pelvis -	1	1	See Table No. VII.
Heart disease - -	1	0	Os three-quarters open.
Ruptured uterus -	1	1	See Report.
Total - -	81	10	

Sub-table A.—*Showing No. of Pregnancy.*

I.-para - - -	65
II.-para - - - -	12
III.-para - - -	0
IV.-para - - -	1
V.-para and over - - -	3
Total -	81

Sub-table B.—*Showing Ages of Patients.*

17–25 - -	26
26–30 - -	33
31–35 - -	15
36 and over -	7
Total -	81

TABLE No. IX.—*Eclampsia.*

Name	Age and Para	Condition on Admission	Urine	No. of Fits			Treatment	Result to Mother	Result to Child	Remarks
				Before Labour	During Labour	After Labour				
M. B., admitted Nov. 9, '07	28 years II.	Had a fit on the way to waiting ward	Albumen abundant	2	-	-	Morphin; purgatives; enemas (3). Delivered Nov. 10, '07	Rec.	A	Admitted twenty-four hours before delivery, not in labour
E. M., admitted Dec. 10, '07	30 years II.	Unconscious	Albumen abundant	6	-	-	Morphin; stomach and bowel washed out; enema; purgatives. Delivered Dec. 11, '07	Rec.	A	Semi-conscious up to time of delivery
B. D., admitted Dec. 23, '07	24 years I.	Unconscious	Albumen abundant	-	6	-	Morphin; purgatives; forceps; os three-quarter open. Delivered Dec. 23, '07	Rec.	A	Admitted in labour
S. H., admitted Jan. 1, '08	32 years I.	Unconscious	Albumen abundant	13		-	Morphin; stomach and bowel washed out; bled 12 oz.; saline intravenous 1½ pts.; purgatives; stimulation. Delivered Jan. 1, '08	Died 1/2/'08	D	Patient operated on about a year before admission after eight years' sterility; a posterior division was done. No fit for forty-four and a half hours before death. Conscious for several hours before delivery. *See* Mortality Report
M. K., admitted Mar. 11, '08	20 years I.	Apparently in good health; in labour	Albumen abundant	-	-	2	Morphin; bowel washed out; purgatives. Delivered Mar. 12, '08	Rec.	A	Fits started two and a half hours after delivery

TABLE No. IX.—*continued.*

Name	Age and Para	Condition on Admission	Urine	No. of Fits			Treatment	Result to Mother	Result to Child	Remarks
				Before Labour	During Labour	After Labour				
E. C., admitted Mar. 14, '08	18 years I.	Unconscious; œdema of labia and legs	Albumen abundant	10	–	–	Morphine; bowel washed out. Delivered Jan. 15, '08	Rec.	D D	Twins; premature; six months
L. S., admitted Apr. 11, '08	28 years I.	Unconscious. History of two weeks œdema	Albumen abundant	13	–	–	Morphin; bowel and stomach washed out; purgatives. Delivered April 12, '08	Rec.	D A	Twins; one macerated. Patient had phthisis
M. N., admitted Apr. 19, '08	39 years I.	Unconscious	Albumen abundant	10	–	–	Morphin; bowel and stomach washed out; purgatives. Delivered April 20, '08	Rec.	D	—
M. G., admitted May 27, '08	20 years I.	Unconscious	Albumen abundant	Several before admission; 3 after	–	–	Morphin; bowel and stomach washed out; purgatives. Delivered May 29, '08	Rec.	D	Conscious twenty-four hours before onset of labour
J. C., admitted June 2, '08	27 years I.	—	Albumen abundant	–	–	20	Morphin; atropin; stomach and bowel washed out; submammary infusion of salt solution. Delivered June 3, '08	Rec.	A	Child died shortly after birth. Fits started three and a half hours after delivery
M. B., admitted June 5, '08	25 years I.	Apparently in good health	Albumen abundant	–	–	1	Morphin; stomach and bowel washed out. Delivered June 15, '08	Rec.	A A	Twins. Fits started two and a half hours after delivery
M. H., admitted June 8, '08	21 years I.	Apparently in good health	Albumen abundant	–	6	–	Morphin; stomach and bowel washed out. Delivered June 12, '08	Rec.	A A	Glycosuria and albuminuria; *post-partum* hæmorrhage

TABLE No. X. A.—*Morbidity.*

British Medical Association Estimation	Nov.	Dec.	Jan.	Feb.	March	April	May	June	July	Aug.	Sept.	Oct.	Total
Total Cases -	146	152	139	136	174	195	190	211	172	189	163	153	2020
Cases Morbid -	7	8	5	7	10	15	9	13	12	9	7	5	107
Percentage -	4.79	5.26	3.60	5.15	5.75	7.69	4.74	6.16	6.98	4.76	4.29	3.27	5.30

Total number - 107
Total percentage - 5.30

TABLE No. X. B.

Rotunda Estimation	Nov.	Dec.	Jan.	Feb.	March	April	May	June	July	Aug.	Sept.	Oct.	Total
Total Cases	151	156	142	140	178	197	193	215	173	193	165	157	2060
Cases Morbid -	6	6	5	7	7	8	6	7	5	7	7	4	75
Percentage -	3.97	3.85	3.52	5.00	3.93	4.06	3.11	3.26	2.89	3.63	4.24	2.55	3.64

Total number - 75
Total percentage - 3.64

TABLE No. X. C.

Both Estimations	Nov.	Dec.	Jan.	Feb.	March	April	May	June	July	Aug.	Sept.	Oct.	Total
Total Cases -	146	152	139	136	174	195	190	211	172	189	163	153	2020
Cases Morbid -	5	5	4	4	5	5	6	5	4	5	5	2	55
Percentage -	3.42	3.29	2.88	2.94	2.87	2.56	3.16	2.37	2.33	2.65	3.07	1.31	2.74

Total number - 55
Total percentage - 2.74

Table No. X. D.—*Comparison of Morbidities.*

PRIMIPARÆ.

British Medical Association Estimation	Nov.	Dec.	Jan.	Feb.	March	April	May	June	July	Aug.	Sept.	Oct.	Total
Total Cases -	46	52	52	45	58	78	84	73	63	75	61	62	749
Cases Morbid	3	2	4	4	2	7	5	5	4	6	3	2	47
Percentage -	6.52	3.85	7.69	8.88	3.45	8.97	5.95	6.85	6.35	8.00	4.92	3.23	6.28

Total cases - 47
Percentage - 6.28

MULTIPARÆ.

Total Cases -	100	100	87	91	116	117	106	138	109	114	102	91	1271
Cases Morbid -	4	6	1	3	8	8	4	8	8	3	4	3	60
Percentage -	4.00	6.00	1.15	3.30	6.90	6.84	3.77	5.80	7.34	2.63	3.92	2.20	4.72

Total cases morbid - 60
Total percentage - 4.72

Table No. XI.—*Causes of Morbidity other than Uterine.*

Bronchitis	4
Constipation	1
Cracked nipples	1
Eclampsia	5
Hæmorrhoids	1
Heart disease and uræmia	1
Influenza	5
Pneumonia	2
Puerperal ulcer	2
Pulmonary tuberculosis	3
Pustular eruption on vulva	1
Septic sore on chin	1
Septic sore on thumb	1
Suppurating sinus following nephrectomy ...	1
Tonsillitis	1
Tuberculosis of elbow	1
Ulcer, infected, of leg	1
Total ...	32

TABLE No. XII.—*Operative Cases, showing Morbidity.*

Forceps (both, 7 ; English, 7; Rotunda, 1) - - - -	15
Incomplete abortion (both, 1) - - - - - -	1
Induction of abortion (both, 1) - - - - - -	1
Induction of labour (both, 1) - - - - - -	1
Manual removal adherent Placenta (both, 1 ; English, 1) - -	2
Placenta Prævia. Version (both, 2) - - - - -	2
Ruptured Uterus (English, 1) - - - - -	1
Total,	23

Of these cases twelve forceps cases associated with lacerated perineums; one version associated with lacerated perineum ; one forceps case associated with manual removal of adherent placenta not separately listed.

TABLE No. XII. A.—*Percentage Operative Morbidity, B. M. A. Estimation.*

Forceps - - - - -	17.28 per cent.
Manual removals - - - - -	22.22 per cent.
Version for placenta prævia - - -	25.00 per cent.

TABLE No. XIII.—*Lacerated Perineums showing Morbidity.*

B.M.A. estimation alone - - - - - -	16
Rotunda „ „ - - - - - -	3
Both estimations - - - - - - -	10
Total,	29

Of these cases twelve were associated with forceps ; one was associated with eclampsia.

The following Tables are based on those cases morbid by B. M. A. Estimation :—

TABLE No. XIV.—*Duration of stay in House of Morbid Cases.*

Under 10 days -	46, including 2 deaths.
10–19 days -	50, including 3 deaths.
20–29 days -	6, including 1 death.
30–39 days -	3
40–49 days -	2, including 1 death.
	107

Table No. XV.—*Duration of Temperature.*

Under 10 days	-	86, including 4 deaths.
10–19 days	-	15, including 1 death.
20–29 days	-	3
30–39 days	-	1
40–49 days	-	1, including 1 death.
		106

One death, Cæsarean Section, unaccompanied by temperature.

Table No. XVI.—*Highest Temperature Recorded.*

100°	-	100.9°	-	31, including 1 death.
101°	-	101.9°	-	37, including 2 deaths.
102°	-	102.9°	-	21, including 1 death.
103°	-	103.9°	-	12, including 1 death.
104°	-	104.9°	-	5, including 1 death.
				106

Of the 2,060 cases delivered, 126 showed a temperature over 100.4° F., but 20 of these occurred on the first day, and did not come under the morbidity rule of the B. M. A.

Table No. XVII.—*Treatment of Morbid Cases.*

No treatment	-	-	-	42
Vaginal douche only	-			10
Uterine douche	-	-		51
Quinine only	-	-	-	4
				107

In 9 cases quinine was given in conjunction with other treatment.

Antistreptococcic serum was used in 4 cases, including one case that died.

Table No. XVII. A.—*Uterine Douches.*

20	cases	received	1 douche.
13	cases	received	2 douches.
10	cases	received	3 douches.
4	cases	received	4 douches.
3	cases	received	6 douches.
1	case	received	7 douches.
51			

TABLE No. XVIII.—*Maternal Mortality.*

Name and Age	Admitted	Delivered	Died	Cause of Death	REMARKS
	1907	1907	1907		
A. F., 36 yrs.	Dec. 22	Dec. 23	Dec. 23	Shock	Cæsarean section, adherent placenta
	1908	1908	1908		
A. O'B., 25 yrs.	Jan. 26	Jan. 26	Mar. 10	Pyæmia	Vaginal discharge, with scalding of vulva and groins on admission
S. A. A., 32 yrs.	Jan. 29	Jan. 31	Feb. 1	Eclampsia	—
W. C., 22 yrs.	Feb. 8	Feb. 9	Mar. 5	Puerperal insanity	Aortic stenosis, mitral regurgitation
C. C., 40 yrs.	June 1	June 9	June 18	Uræmia, chr. nephritis and endocarditis	Induction of labour
M. C., 31 yrs.	June 14	June 15	July 1	General peritonitis	Developed suddenly on 16th day of puerperium
K. M'A., 33 yrs.	Aug. 7	Aug. 8	Aug. 11	General peritonitis	Incomp. abortion

(*To be continued.*)

ART. VI.—*Acute Parotitis in Pneumonic Fever.* By SIR JOHN MOORE, M.A., M.D., D.P.H. Dubl.; D.Sc. (*Honoris causâ*) Oxon.; F.R.C.P.I.; Physician to the Meath Hospital and County Dublin Infirmary; Professor of Medicine, Royal College of Surgeons in Ireland.

THE following case seems deserving of record:—

On Monday, June 28, 1909, Christopher O., aged twenty-five, married, a labourer, was admitted under my care into the Epidemic Wing of the Meath Hospital, on the third day of a severe attack of acute pneumonia. On admission, the axillary temperature was 103.4°, the pulse-rate was 120, and the respirations varied from 32 to 38. Towards evening the temperature rose to 103.8°. On physical examination, marked myoidema was elicited on percussion, especially over the right apex. In this area the percussion note was dull to flatness, and the movements of the right side of the chest were scarcely perceptible, whereas the left side rose and fell as if the man was quite out of breath.

The liver was both displaced downward and also somewhat enlarged. The heart beat rapidly, and was extremely weak. The

patient brought up characteristic viscid and rusty pneumonic sputa with difficulty. He was aphonic and looked wretched: he was evidently most seriously ill.

On Wednesday, June 30, the sputum became darker and more liquid—it also began to smell offensively, so that turpentine was prescribed in capsules—10 minims three times a day.

The fever kept on until the eleventh day, defervescence taking place by lysis. Meanwhile, no evidence of any attempt at resolution in the upper lobe of the right lung was forthcoming—a circumstance which is not uncommon in apical pneumonia. The breathing also remained very laboured, the rate varying from 40 to 54 between the sixth and the tenth days. From the evening of the eleventh day to the morning of the fourteenth (July 9th) the temperature ranged rather below the normal, it was only 97° on the morning of the latter day, but in the evening it rose to 99.2°. Next morning, the right parotid region was enormously swelled. The skin was glistening from distension and very hyperæmic. It was œdematous, but gave no decided sensation of fluctuation. Nevertheless, Dr. Wm. Boxwell, after consultation with me, made an incision into the swelling, but without reaching pus. And now came the interesting turn in the case. Coincidently with the swelling of the parotid gland, rapid resolution set in throughout the affected part of the right lung—the dulness lessened almost at once, coarse crepitations were heard, the movements of the chest wall became quite perceptible, and the patient recovered his voice. At the same time, also, desquamation of the most marked kind took place over the face, hands, and feet. The patient presented the appearance of a convalescent from scarlatina in the third week of that disease. His recovery was uninterrupted and happily complete.

At no time was albumen found in the urine. Nor was there any development of nasal, labial, or oral herpes.

The clinical chart is appended. On July 15, he was ordered a strychnin mixture and full diet, and on Sunday, the 18th, he was allowed to get up for the first time.

Acute swelling of the parotid gland—parotitis, with or without suppuration—is an occasional complication of the specific febrile infections—especially typhus, enteric fever, relapsing fever, and pneumonia. The swelling usually develops

on one side. Rarely both glands are affected at the same time; more commonly first one and then the other gland suffer in turn.

As regards enteric fever, parotitis is an infrequent but serious complication. Murchison[a] met with six cases of parotid bubo, of which five terminated fatally. Trousseau[b] says:—"Ce que les anciens auraient appelé une crise ou une métastase, je l' appelle une très funeste complication." According to Hoffmann,[c] sixteen cases of suppurative parotitis were found at Basle among about 1,600 enteric fever patients, nine of the sixteen proving fatal. Liebermeister[d] considered that the frequency of suppurative parotitis has greatly diminished since the introduction of a systematic antipyretic treatment. His experience was that among 210 fatal cases of enteric fever observed by him between 1865 and 1868 parotitis was present in six—that is, in 2.8 per cent.[e] Curschmann[f] personally determined that during epidemics at Hamburg in 1886 and 1887 only 0.3 per cent., and in Leipzig only 0.5 per cent., of the patients exhibited inflammation of the parotid glands. Of twenty-eight cases collected by W. W. Keen,[g] of Philadelphia eight were fatal. Professor Osler met with twelve cases, of which four terminated in death.

With regard to the mode of origin of parotitis in enteric fever, Virchow[h] considered that infective processes extended from the mouth through the parotid duct (Stenson's) to the gland. While accepting this explanation as correct for some

[a] *Continued Fevers of Great Britain.* Third Edition. Edited by W. Cayley, M.D., F.R.C.P. Longmans, Green & Co. 1884. Page 584.

[b] *Clinique médicale de l' Hôtel Dieu.* Paris. 1865. Tome I. Page 246.

[c] *Untersuchungen über die path. anat. Veränderungen der Organe beim Abdominaltyphus.* Leipzig. 1869.

[d] *Von Ziemssen's Cyclopædia of the Practice of Medicine.* Vol. I. Page 161. London: Sampson Low & Co. 1875.

[e] Betke. *Inaug. Diss.* Basle. 1870.

[f] *Nothnagel's Encyclopedia of Practical Medicine.* Volume edited by William Osler, M.D. Page 202. Philadelphia and London: W. B. Saunders & Co.

[g] "The Toner Lectures," 1876, *Smithsonian Miscellaneous Collections*, No. 300. Also *cf.* "Typhoid Parotitis." *The Surgical Complications and Sequels of Typhoid Fever.* Philadelphia. 1898. Page 182.

[h] *Charité-Annalen*, 1858.

cases, Curschmann[a] reminds us that the glands are more frequently directly involved in consequence of the action of the typhoid toxins than are other organs. Also the typhoid bacilli themselves may in some cases be the direct excitants of the inflammation. At least one case has been reported—by Janowski—in which a pure culture of the *Bacillus typhosus* was obtained from the suppurating gland.[b] Schudmak and Vlachos[c] also more recently (1900) recorded a case of parotid abscess in which the typhoid bacillus was obtained in pure culture from the pus. In a number of other cases the typhoid bacillus has been associated with pyogenic cocci.[d] In several instances Curschmann has been able to demonstrate the presence of staphylococci exclusively in the pus obtained by puncture of the gland during life. Exceptionally he has observed parotitis as one of the symptoms of a complicating general septicæmia.

In typhus fever, Lebert[e] on several occasions has seen enlargement and suppuration of the parotid gland, and he considered this complication as a very dangerous one. Nevertheless, he often witnessed a successful termination from the time when he began to treat all the abscesses and suppuration processes in his wards "according to the method of Lister." "Parotitis," he adds, "occurs early in many epidemics, likewise often, even in 20 per cent. of the cases (Schilling, New York, 1852)."

According to Murchison, parotid swellings were present in 211 instances among 14,676 typhus patients admitted into the London Fever Hospital in the ten years, 1861–1870—that is, in one out of 695 cases. In the first two years of the epidemic they existed as often as one in 50.3 cases (38 in 1,914), whereas in the last three years of the period they were met with in only 48 of 3,854 cases, or one in 80.3.

[a] *Loc. cit.* Page 203.

[b] *Centralblatt für Bakteriologie und Parasitenkunde*, 1895, Band XVII. Page 685.

[c] *Wien. klin. Wochenschrift.* Vol. XIII. Page 661.

[d] Anton and Fütterer. *Münch. med. Wochenschrift*, 1888, No. 19.

[e] Article on Typhus Fever" in von Ziemssen's *Cyclopædia of the Practice of Medicine.* Vol. I. Page 331. London: Sampson Low, Marston, Low, and Searle. 1875.

To this astute and accurate observer we owe the following graphic account of this complication[a] :—

"The swellings in the parotid and submaxillary regions usually appear at, or immediately after, the crisis of the primary fever ; but in several instances I have met with them in the first week, while in others they are not developed until convalescence. They occur at almost every age from two up to seventy ; but the majority of the patients have been above the average age of typhus cases—*i.e.*, upwards of twenty-nine. They are usually accompanied by considerable redness, tension, pain, tenderness, and sometimes œdema, of the super-imposed skin ; by inability to open the mouth, or to protrude the tongue ; occasionally by œdema of the glottis, dysphagia, or deafness ; and, in most cases, by great prostration, congestion of the lungs, and aggravation of the general symptoms. They often form with great rapidity : at one visit the face may be natural ; at the next, a few hours after, one side of it may be enormously swollen. They also advance rapidly to suppuration, an extensive collection of matter forming in from two to four days ; at other times they recede without suppurating : or the swelling, after receding and almost disappearing, returns and rapidly advances to suppuration ; occasionally, they coexist with erysipelas of the face or with a brawny swelling of the neck. When not opened artificially, they may burst externally by one or more points, or into the mouth, or into the meatus of the ear. In one case a parotid abscess was followed by complete facial paralysis."

As a complication of erysipelas, "parotid bubo"—as the lesion is sometimes called—is rare. In 140 cases of erysipelas observed by Dr. Hermann Lenhartz, of Hamburg, the suppurating form of parotitis was observed but twice.[b]

In connection with relapsing fever, Dr. A. Rabagliati, of Bradford, writing in Allbutt's and Rolleston's *System of Medicine*,[c] observes, when referring to the sequels of this

[a] *Loc. cit.* Page 217.

[b] Art. "Erysipelas," in *Nothnagel's Encyclopedia of Practical Medicine.* Edited by Dr. Alfred Stengel. Philadelphia and London : W. B. Saunders & Co. 1902. Page 481.

[c] Volume I. Page 1188. London : Macmillan & Co. 1905.

malady—"Parotitis must be especially mentioned, not because of its frequency in Great Britain, where on the contrary it is very rare, but because in some epidemics—as in that which occurred in Russia about thirty-five years ago—its comparative frequency has led to the rumour of plague."

Coming in the last place to the particular acute infection which is the subject of the present communication, we find that parotitis is a very rare, but generally an exceedingly serious, complication, which is met with in aged or debilitated patients. It is usually unilateral, according to Grisolle, and commonly terminates in suppuration, or even in gangrene. In the Reports of the Vienna Hospitals this inflammation of the parotid gland is mentioned only six times in 5,783 cases of pneumonia. Von Jürgensen never saw this complication—a sufficient proof of its rarity. Testi in 1889 obtained the *Diplococcus pneumoniæ* of Fränkel in pure cultures from the pus in a case of parotitis complicating "acute croupous pneumonia," or—more correctly—pneumonic fever.[a]

In the case which I have briefly reported above two points strike one. The first is that the early incision into the parotid swelling by relieving tension probably prevented suppuration on the one hand, or possible gangrene on the other. The second is that the sudden swelling of the right parotid gland may be looked on as "critical," using the term in its old classical sense. Certain it is that if metastasis may be assumed to have taken place, the halting resolution in the apex of the right lung quickened its pace and thenceforth proceeded by leaps and bounds.

[a] *Encyclopædia Medica.* Vol. IX. Edinburgh: William Green.

A GEOGRAPHICAL SLIP.

In the July number of this Journal, at page 80 of the present volume, St. Louis is stated to be situated in the State of Minnesota, U.S.A. The city in question is, as a matter of fact, the Capital of the State of Missouri, the abbreviation for which is, curiously enough, "Mo.," while that for Minnesota is, more reasonably, "Minn."

PART II.

REVIEWS AND BIBLIOGRAPHICAL NOTICES.

Tuberculosis in Infancy and Childhood: its Pathology, Prevention and Treatment. By various writers. Edited by T. N. Kelynack, M.D.; Hon. Physician to the Infants' Hospital, Westminster. 27 Illustrations. London: Baillière, Tindall & Cox. 1908. Demy 8vo. Pp. xiii + 376.

This comprehensive study of tuberculosis in early life is a useful addition to the current literature on tubercular disease.

It is not the work of one author, but is "representative not only of the best English and American opinion, but also of those progressive nations who are giving particular attention to the protection of childhood and the solution of the tuberculosis problem." All available facts and theories bearing in any way on the problem are presented in a convenient and readily accessible form, and when over-lapping has occurred the subject has usually been approached from a different point of view.

The Editor, in the opening chapter, gives some carefully compiled statistics, gleaned from various parts of the world, to show the great prevalence of tuberculosis in early life, and appeals "for a more serious and thorough study of the tuberculosis problem as met with in early life."

Dr. Nathan Raw discusses the important question of bovine tuberculosis in children, and summarises our present position thus:—

(1) Human and bovine tuberculosis are different varieties of a common species.

(2) The human body is susceptible to both forms.

(3) Bovine tuberculosis is frequently conveyed to humans both by means of infected food and by contagion.

(4) These two forms of tubercle are antagonistic to each other.

(5) A mild attack of bovine tuberculosis protects against phthisis pulmonum.

We are inclined to think that on (4) and (5) the verdict of the profession would be "not proven."

Chapters 6 to 21 deal with tuberculosis as it affects the different organs of the body.

Each chapter forms a complete monograph, is clearly and concisely written and affords a perfect means of easy reference.

The remainder of the book is largely statistical and hygienic. The various chapters deal with tuberculosis among children in different European countries, the management and treatment in such cases, and the various measures that have been successfully employed.

There are several well-executed illustrations of sanatoriums, which add, no doubt, to the expense of the book, but little to its real value.

The index is most complete and extremely carefully compiled.

The book is well bound and clearly printed on good paper, but it has the disadvantage of being unduly heavy for a volume of its size.

School Athletics and Boys' Races. By WILLIAM COLLIER, M.D., F.R.C.P.: Physician to the Radcliffe Infirmary and County Hospital [Oxford]. Medical Officers of Schools Association. London: J. & A. Churchill. 1909. Pp. 32.

WE have received the report of a meeting held on March 10 by the Association of Medical Officers of Schools at which the subject of School Athletics and Boys' Races was discussed.

The meeting was held in consequence of letters which appeared in the English daily papers last February, commenting upon a letter of Mr. T. Herbert Farmer. Mr. Farmer's letter contained a statement signed by the following five well-known names:—Lauder Brunton,

Thomas Barlow, James F. Goodhart, W. Hale White, and Alfred Fripp. These five authorities stated that they consider that school and cross-country races exceeding one mile in distance are wholly unsuitable for boys under the age of nineteen, as the continued strain involved is apt to cause permanent injury to the heart and other organs.

The discussion was opened by Dr. Shelly, and continued by Sir Lauder Brunton, the Rev. D. James, Dr. M'Clure, the Rev. the Hon. Canon Lyttleton, Dr. Goodhart, and Mr. Farmer.

The following are, in brief, the principal resolutions which were adopted by the meeting:—

(1) A boy's fitness for physical exertion depends upon his physical and constitutional ability, and is not to be gauged merely by his age.

(2) Every boy should be subjected to a thorough medical examination when he first enters school.

(3) Observations should be made of boys during their ordinary games.

(4) It is most important that there should be ample interval between a meal and active exercise—one hour at least.

(5) As regards races generally boys should be selected and grouped for a specified distance in accordance with their physical capacity.

(6) Medical examination and skilled supervision are also needed in regard to rowing, boxing and swimming.

(7) Periodical medical examination and individual supervision are equally important in the case of girls.

With the above resolutions every medical man will be in complete accord, and we are glad to know that in the case of the secondary schools of England such a body exists as the Association of Medical Officers of Schools to formulate authoritative opinions on the important subject of physical education. In Ireland there is, so far as we know, no such Association, and so far as either physical education or school hygiene is concerned the regulations are entirely in the hands of well-intentioned, but thoroughly incompetent, amateurs.

Neither the National Board of Education nor the Inter-

mediate Board contains a single representative of the medical profession as such.

It happens that a medical man does sit on each Board; he does not represent Medicine, however, but the special interests of some collegiate institution. In our opinion each of these Boards should contain two representatives of Medicine as such—an opinion which has been publicly adopted by the Irish Medical Association at its recent general meeting in Sligo. A simple method of effecting this most needful reform, and which would remove all the difficulties arising from sectarian and local interests, would be the following:—

On the occurrence of a vacancy the Lord Lieutenant would direct the Irish representatives on the General Medical Council to select three names of medical men for his approval, and make the appointment from this list.

From a perusal of the discussion it is evident that no direct proof is forthcoming for the truth of the alarming statement published in Mr. Farmer's original letter. No case of permanent injury resulting from school-boy races is recorded.

Notes on Sour Milk and Other Methods of Administering Selected Lactic Germs in Intestinal Bacterio-therapy. By ÉLIE METCHNIKOFF, of the Pasteur Institute, Paris. London: John Bale, Sons & Danielsson, Ltd. 1909. Pp. 20.

THIS booklet is the chapter dealing with the curdled milk question in a work on which the author is at present engaged, and is intended as a general reply to the numerous requests which he received for further information on the subject of curdled milk in consequence of his address at the Congress on Old Age.

It is almost unnecessary to state that the booklet is written with characteristic clearness, and deserves a careful reading. In its small compass will be found full information as to the forms of curdled milk used by various primitive people. The nature as well as the advantages and drawbacks of each are pointed out. The part played by lactic fermentation in preventing decomposition is

clearly indicated, while the evil effects of alcoholic, butyric, and other secondary fermentations, are insisted upon. Finally, he recommends lactic germs in the form of "lactobacilline" for the treatment of intestinal disorders in both children and adults.

To those who scoff, to those who believe the lactic bacillus will do away with all the ills of life, to those who have hitherto been indifferent, to each and all we recommend this little pamphlet. A disappointment, however, is in store for those who wish to live far beyond the years allotted by the Psalmist, as the author's final words are a repudiation of "the idea that these microbes possess the property of determining longevity or of averting old age, except in so far as they make for a high standard of life."

The Influence of Heredity on Disease, with special reference to Tuberculosis, Cancer and Diseases of the Nervous System. A Discussion. London: Longmans, Green & Co. 1909. Royal 8vo. Pp. 142 + xii.

A DISCUSSION upon the above subjects by present-day experts of the very highest ability, and speaking with the greatest authority in their respective and specialised domains, has been given to us by the publication of these proceedings by the Royal Society of Medicine.

The President, Sir W. S. Church, claims in his introductory address to have produced this discussion, and everyone will give him hearty thanks for his endeavour to elicit the opinions of such a number of capable experts, whose varied experiences and original researches when collected together must throw light and increased knowledge upon such complex and highly debatable subjects as the *rôle* played by heredity in the causation of cancer, insanity and tuberculosis.

The present publication is of the greatest interest both to the alienist and to the physician and surgeon.

Sir William Church, in opening the discussion, briefly reviews the present-day theories as regards heredity and bio-genesis, and states that he is unable to see "on what evidence the assumption of a specific difference

between germ-plasm and somatic matter is made." The President of the Society goes on to state that the disappearances of diseases such as leprosy and the differences in virulence of different epidemics of measles, scarlet fever and small-pox tend to convince us that we know very little as regards the crux of immunity. Does immunity depend upon a weakened virulence of the infection, or a greater resistive power of the individuals attacked? To a solution of this question he hopefully looks forward. Cancer-cell proliferations he refers to, and ably points out the similarity between this and the oak gall productions of the vegetable kingdom.

Sir William Gowers, who opened the discussion with regard to the nervous system, tells us much as regards the hereditary influences productive of pseudo-hypertrophic paralysis, which he clearly shows to be due to maternal heredity and transmitted by the mother to her sons only. He denies the risk of heredity in the marriage of epileptics where the epilepsy is of the so-called "*organic*" kind produced by a trauma, or organic lesion of the brain.

Drs. Mott's, Mercier's and Savage's remarks are of the greatest interest, and these three great thinkers and teachers of Psychological Medicine have clearly stated their views as regards the hereditary causation of insanity, and few who have had much practical experience of the treatment and study of the insane will differ from them. Dr. Mott's remarks as regards the *rôle* played by alcohol in the production of insanity are especially interesting and instructive. The contribution to the discussion by Professor Bateman is full of scientific thought, whilst that of Dr. Bashford and the other learned men who joined in the discussion and gave their views is of the greatest value and will well repay perusal by all thinkers and medical workers.

The publication of this discussion will prove not alone of present-day interest, but will be a landmark in the progress of medical knowledge. The collection of so much information derived from such varied sources and from so many world-known labourers in the field of scientific Medicine must be widely read; and it has only to be read to be appre-

ciated. If the science of Eugenics is ever to be of practical benefit to the human race discussions like the present are of permanent importance, and the Royal Society of Medicine is doing good work in publishing these discussions of general medical interest.

R. R. L.

RECENT WORKS ON PHYSIOLOGICAL CHEMISTRY.

1. *Chemical Constitution of the Proteins.* By R. H. Aders Plimmer, D.Sc. In Two Parts. Longmans, Green & Co. 1908. Pp. 100 + 66.

2. *The Nature of Enzyme Action.* By W. M. Bayliss, D.Sc., F.R.S. Pp. 90. 1908.

3. *The Fluids of the Body.* By Ernest H. Starling, M.D., F.R.S. A. Constable & Co. 1909. Pp. 186.

4. *Inborn Errors of Metabolism.* By Archibald E. Garrod, M.D. Oxford University Press. 1909. Pp. 168.

1. A series of monographs on Biochemistry is being issued under the joint editorship of Dr. Plimmer and Dr. F. G. Hopkins with the view of presenting a summary of recent researches upon metabolism in a compact and authoritative form. Dr. Hopkins has contributed an introductory *brochure* on the development and present position of biological chemistry. The exposition of the chemical constitution of the proteins, the corner-stones of biology, has been entrusted to the capable hands of Dr. Plimmer, who is Assistant Professor of Physiological Chemistry in University College, London.

After nearly a century of chemical investigations it is only during the last ten years that, by the work of Emil Fischer and his pupils, any clear view has really been obtained of their actual constitution. The main result of these researches is that the protein molecule is built up of a long series of amino-acids—*i.e.*, organic acids which include NH_2.

These amino-acids are known as the units or foundation stones of the protein molecule, and, consequently, the subject naturally distributes itself under three sections:—

(*a*) The chemical composition of the protein molecule.

(*b*) The chemical constitution of its units.

(*c*) The synthesis of the proteins.

The book inevitably bristles with complicated chemical formulæ, and is not easy reading. It is, in truth, impossible for any one to clearly follow, or even comprehend, the import and inner meaning of these modern investigations without a sound, general acquaintance with the principles and laws of organic chemistry.

By all such readers, a happily increasing band, Dr. Plimmer's book will be appreciated, as embodying a *multum in parvo*, and we, therefore, cordially welcome its appearance.

2. Even a beginner in physiology cannot fail to be soon impressed with the supreme importance and interest of the problems relating to ferments, or enzyme action, and the subject is rapidly assuming a well-defined position capable even of being subjected to the scrutiny of mathematics. The operation of ferments lies at the root of most biochemical reactions, and we have arrived at the conception that metabolism in the higher organisms is mainly the result of ferment action in their cells. Dr. Bayliss's essay is intrinsically excellent, is well arranged, and is a lucid exposition of difficult topics.

Chemically speaking, ferment action is described as "catalytic." A "catalyser" is an agent which, in minimal quantity and without necessarily undergoing change itself, and without appearing in the final products of the reaction, *alters the rate of reaction* of other bodies to which it is added—*e.g.*, the hydrolysis (inversion) of cane sugar by a trace of acid (*i.e.*, ionic hydrogen).

This alteration in rate may be either in the direction of quickening or of retardation—*i.e.*, we have to consider both "positive" and "negative" catalysis.

The term *enzyme*, due to Kühne, merely connotes that an action takes place similar in character which occurs ἐν ζυμῇ when yeast (ζύμη) ferments sugar into alcohol and CO_2.

An enzyme, then, is a catalyst produced by living organisms, and the termination "ase" has come into common use as denoting an enzyme, and so we speak of lactase, maltase, amylase, &c.—the first part of the word referring to the "substrate" upon which the enzyme operates.

As an instance of the prodigious potency of ferment action we may note such facts as these:—Invertase can hydrolyse (invert) 200,000 times its weight of saccharose; and rennet can clot 400,000 times its weight of caseinogen in milk.

When we remember that these preparations consist, in all probability, only to a small extent of the actual enzyme, their amazing activity becomes all the more astonishing.

Enzymes, in contradiction to inorganic catalysts—*e.g.*, finely divided platinum—are destroyed by a temperature below 100° C.

The general conclusion deducible from the laborious investigations which have been carried out by various observers is this:—

The living organism is enabled, by the use of enzymes, to bring about, under ordinary conditions of temperature and moderate concentration of acid or alkali, many chemical reactions which would otherwise require a high temperature or powerful reagents.

After a brief introduction on the subject of catalysis in general, enzymes are considered as catalysts, and their preparation and properties are succinctly described.

Instances are adduced of the reversibility of enzyme action, and there are interesting chapters upon he velocity of reaction, the nature of the combination between enzyme and the substrate upon which it acts.

In three short chapters the reader is introduced to co-enzymes and anti-enzymes, to zymogens, and to the various enzymes concerned in the mechanisms of oxidation.

This is sufficient to show what a varied feast is spread before the reader, and the book is, in all respects, deserving of attentive study by every one who desires to become acquainted with the latest investigations in a fascinating field.

3. Dr. Starling's book consists of eight lectures delivered, some in London and some in New York, and they appear under the auspices of the Mercers' Company. Dr. Starling is Jodrell Professor of Physiology in University College, London, and has himself made important contributions to experimental physiology.

The fluids of the body are thus distributed:—

(1) The circulating *blood*, contained in a closed system of tubes, and everywhere separated from the tissues by a layer of endothelium.

(2) The *lymph*, also contained in a closed system of endothelial tubes connected at one or more points with the blood vascular system.

(3) The *tissue fluid*, filling all the spaces of the body, and in immediate contact with the tissue cells.

The main purpose of the book is to expound the factors which determine the fluid exchanges of the cells, and the last lecture deals, in an interesting and suggestive fashion, with the causation of dropsy—a subject of ever-recurring clinical interest and importance.

It is clearly shown that, in all cases, the primary cause of œdema is an increased transudation of fluid into the tissues and spaces of the body. The normal mechanism of absorption of fluids may for some time hold this process in check, but whenever the increased transudation endures any length of time, subsidiary events cause a breakdown of the absorbing mechanism, and so leads to the occurrence of œdema.

The cases are very few in which œdema can be ascribed primarily to a diminished absorption, and, in the case of the lymphatics, when a complete obstruction does take place, it is noteworthy that the result seems to be rather a general hypertrophy of the connective tissues, as in elephantiasis, than a true œdema. The precise causation

of dropsy in Bright's disease is at present enshrouded in ignorance, and its pathogeny is undoubtedly complex.

The book is well worth reading as an exposition by a master-hand of the physico-chemical factors which appear to govern the intake, the output, the distribution, and the exchanges of the fluids of the body.

4. Dr. Garrod is Assistant Physician to, and Lecturer on, Chemical Pathology at St. Bartholomew's Hospital, and he embodies in this volume the Croonian Lectures delivered before the Royal College of Physicans in June, 1908.

The interval since their delivery has been utilised to revise the text and to incorporate the results of some important investigations.

By inborn errors of metabolism, as distinguished from such metabolic diseases as diabetes and gout, are meant anomalies which are probably present from birth, and in which the chemical error pursues an even course, and shows no tendency to become aggravated as time goes on. They may be regarded as metabolic "sports," the chemical analogies of structural malformations, and they are little amenable to therapeutic measures.

The four subjects discussed in detail are Albinism, Alkaptonuria, Cystinuria, and Pentosuria. The interesting and obscure topic of cystinuria is fully treated, yet we must allow that we are still far from being able to formulate a satisfactory theory of this singular anomaly.

The writer of this review has met with two cases of alkaptonuria, but he has not been fortunate enough to witness an example of that peculiar tissue-staining in connection with it which Virchow first described (1866) under the name of *ochronosis*.

Pentosuria represents the latest acquisition to our knowledge of strange urinary anomalies. The first clinical case reported was that by Salkowski and Jastrowitz in 1892. They observed that the urine of a neurasthenic young man, addicted to morphin, gave the reduction tests for sugar, did *not ferment* with yeast, was optically inactive, and yielded with phenyl-hydrazine an osazone

Clinical Chart.—Christopher O.. aged 25 years, married, labourer. Disease—Right Apical Pneumonia.

1909. *June* *July*

DATE	28	29	30	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	16	17	
DAY OF DISEASE	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	
Pulse M		114	100	108	108	108	100	88	90	104	104	104	88	98	98	98	98	100	110	—	—	*Pulse* M
Pulse E	120	100	106	120	120	115	118	88	108	100	106	104	92	92	96	96	94	98				*Pulse* E
Resp M		42	36	40	46	42	42	54	38	36	30	28	28	24	26	26	22	28	28	—	—	*Resp* M
Resp E	38	40	50	44	46	40	44	44	40	38	32	34	32	30	24	26	24	24				*Resp* E
Motions		1	1	0	2	0	3	2	3	2	1	3	1	2	1	1	2	2	—	—	—	*Motions*

TEMPERATURE FAHRENHEIT'S SCALE. 106° 105° 104° 103° 102° 101° 100° 99° 98° 97° 96°

Convalescent.

which melted at 159° C. Further investigation confirmed the presence of a pentose—*i.e.*, a five-carbon sugar, $C_5 H_{10} O_5$, and thus was laid the foundation of our knowledge of pentosuria.

The book appeals more strongly to the physiologist and pathologist than to the average practitioner, but nevertheless is deserving of study by all who are interested in the bye-paths of clinical medicine. W. G. S.

Diathesis and Ocular Diseases. By A. MAITLAND RAMSAY, M.D. Crown 8vo. Pp. viii + 184, and 17 Plates. London: Baillière, Tindall & Cox. 1909. Cr. 8vo. Pp. viii + 164.

THIS excellent little volume contains the post-graduate lectures delivered at the Glasgow Ophthalmic Institution in September, 1908, arranged in book form.

The author has made no attempt, he says, to treat the subjects in a systematic or exhaustive manner. His aim has simply been to give his personal clinical experience and to emphasise the importance of the influence of diathesis on the causation and treatment of diseases of the eye. "Too much attention," he contends, "is being paid to the germ, and far too little to the soil on which it falls." . . . . "Laboratory experiments do not always work out in practice according to expectation; and while physiological inquiry and pathological research have accomplished, and are accomplishing, much in placing treatment on a proper scientific basis, and so making it more intelligent, more rational, and less of an experiment, yet the only touchstone of scientific generalisation must be the experience gained at the bedside." "Diathesis" he defines as simply "a soil." "Infection" he defines as "a soil on which a germ has been implanted and has flourished."

The beginning and the end, he says, of a medical man's practice is treatment, which is just what the medical student of to-day often tends to neglect; and by treatment he does not mean simply the administration of drugs, but the making use of every agency or circumstance which can help to bring about the patient's recovery.

The book deals with the three best marked diathetic condi-

tions—the neurotic diathesis, the scrofulous diathesis, and the arthritic diathesis, which he subdivides into the rheumatic and the gouty forms.

The author has done good work in emphasising what the older physicians regarded as of so much importance, but which there was great danger of the rising generation forgetting, viz.—the importance of the "soil," or what the older men are not ashamed still to call the patient's "constitution."

The book is written in an easy, pleasant style, and is obviously a series of clinical lectures rather than an elaborate compilation.

Nervous and Mental Diseases for Students and Practitioners. By Charles S. Potts, M.D., Professor of Neurology in the Medico-Chirurgical College of Philadelphia; Neurologist to the Philadelphia Hospital; formerly Associate in Neurology in the University of Pennsylvania. Second Edition, revised and enlarged. Illustrated with 133 Engravings and 9 Plates. London: Henry Kimpton. Glasgow: Alexander Stenhouse. 1908. Cr. 8vo. Pp. 570.

Having had occasion to consult the pages of this work in reference to many cases, we can testify to its value as a text-book—certainly of nervous diseases. The subject of mental diseases is much less fully discussed—in fact only 62 out of a total of 533 pages are devoted to "Insanity" and "Idiocy." The illustrations are a special feature in the book—they are both numerous and instructive. Here, too, there is a want of balance between the sections on Nervous and Mental Diseases—the only illustration in the latter section being a diagram of a scheme of the course of the disease in continuous circular insanity taken from the fifth edition of Church and Petersons' text-book on Mental Diseases. Surely mania, melancholia, dementia and idiocy can be as easily portrayed as paralysis agitans, pseudohypertrophic paralysis, cretinism, or acromegaly? If so, why are they not represented in photographs or portraits.

The author's style is clear though "condensed"—that is, wonderfully free from verbiage. American mannerisms are met with here and there, and so are traces of the "reformed"

spelling—such as "anesthesia," "anemia," "hyperemia," "hemorrhage," "uremia," "tumor," "edema," "fibers," and so on.

The opening chapters are among the most instructive in the book. In the first chapter the neuron is described—so are the various tracts formed by the axons. Chapters follow on general pathology, general symptomatology and methods of examination, and general therapeutic measures such as electricity, massage, hydrotherapeutics, the "rest cure," devised by S. Weir Mitchell, and lumbar puncture. Then we have, in Chapter V., an account of various symptomatic disorders like headache, migraine, neuralgia, paræsthesia, vertigo, and disorders of sleep. Chapter VI. introduces organic diseases so far as they affect the peripheral nerves; and in succeeding chapters diseases of the cranial and spinal nerves, inflammation of the meninges, system diseases of the sensory and motor tracts, diffuse and local diseases of the brain or spinal cord or of both brain and spinal cord, general and functional diseases of the nervous system, and vasomotor and trophic diseases are in turn described.

It will be seen from this brief survey of the contents of his work that Dr. Potts has spared no pains to make it as comprehensive as possible. His descriptions are admirably clear, and it is not his fault if any of his readers fails to gain a fair practical knowledge of diseases of the nervous system—and, we may add, of the mind—from an attentive study of this neatly bound and beautifully printed book.

Aids to Forensic Medicine and Toxicology. By WILLIAM MURRELL, M.D., F.R.C.P., Physician to and Lecturer on Clinical Medicine in the Westminster Hospital; Joint Lecturer on Medicine in the Westminster Hospital Medical School, &c. Seventh Edition. Sixteenth Thousand. London: Baillière, Tindall & Cox. 1909. F'cap 8vo. Pp. x + 123.

OUR readers are already familiar with our opinion of the "Aids" series. Probably the subjects, with which the present book deals, lend themselves more legitimately than most others

to treatment in a volume of this kind. And we gladly admit that the author's name guarantees good work whether in a small or a large compass.

The present is the seventh edition of Dr. Murrell's "Aids to Forensic Medicine and Toxicology," and sixteen thousand copies of the work have been struck off. A great deal of new material has been added, and abstracts of most of the recent Acts of Parliament bearing on Forensic Medicine have been incorporated in Part I. In the detection of blood-stains (page 61) no mention is made of the benzidine test, to which a good deal of attention has recently been directed. It is a sensitive test, and easily applied. The suspected specimen is mixed with a little hydrogen peroxide; a few drops of acetic acid are added and then a little benzidine solution. If blood is present, a greenish colour is produced. Benzidine (*p*-diamido-diphenyl) is a crystalline grey powder soluble in alcohol.

Epoch-making Contributions to Medicine, Surgery and the Allied Sciences. Collected by C. N. B. Camac, A.B., M.D. With Portraits. Philadelphia and London: W. B. Saunders Company. 1909. 8vo. Pp. x + 435.

Dr. Camac deserves great credit for his pious resolve to publish "reprints of those communications which first conveyed epoch-making observations to the scientific world, together with biographical sketches of the observers." He has carried out his intention with considerable literary skill. In his "Introduction" he tells us how the volume grew. "Certain of my teachers," he writes, "in presenting a subject at clinics and lectures, had, for the inspection of the students, the article which communicated such observations as first placed the subject upon a sound scientific basis. Subsequently, in my own teaching I followed this custom. There has thus resulted a collection, begun some twelve years ago, of epoch-making articles, a part of which [collection] is gathered into the present volume."

The contents include the following subjects:—Antisepsis (Lord Lister, O.M.), Circulation of the Blood (William Harvey, M.D.), Percussion of the Chest (Leopold Auenbrugger, M.D.), Auscultation and the Stethoscope (R. T. H. Laënnec, M.D.),

Vaccination against Smallpox (Edward Jenner, M.D.), Anæsthesia (Wm. T. G. Morton, Horace Wells, John C. Warren, and J. G. Simpson), and Puerperal Fever (Oliver Wendell Holmes).

Each article is illustrated with a portrait of the author, and is introduced with an interesting and appreciative biography.

The volume is a delightful one, and should be read and re-read by every physician and surgeon who realise that they are the heirs of all the ages.

Drugs and the Drug Habit. By HARRINGTON SAINSBURY, M.D., F.R.C.P., Fellow of the Physiological Society; Senior Physician to the Royal Free Hospital; Consulting Physician to the City of London Hospital for Diseases of the Chest. London: Methuen & Co. 1909. 8vo. Pp. xiv + 307.

THIS is in no sense a text-book. It may be regarded, rather, as a 300 page essay, in which a rather dry and uninteresting subject is treated with a novelty and freshness that makes it most pleasant as well as instructive reading.

Dr. Sainsbury believes in teaching by means of types, and so he deals with representative drugs and conditions rather than with details, his aim being "to seek beneath the multiplicity of surface detail for that underlying simplicity which we know is there."

He begins with a bright historical sketch of the history of Medicine, passing on to the Objective of Drugs—viz., "to prevent, to cure, to prolong life, to comfort"—he takes us through the steps by which the credulities of the remote past have been replaced—but not wholly—by the scientific basis, rational and psychic, on which modern therapeutics stand.

The chapter on "Ideation and Treatment" is a thoughtful addition to a subject that demands our attention—namely, the influence of the mind and the emotions upon the body, which is the foundation of "Suggestion," "Christian Science," "Faith Cure," and such like.

A chapter is devoted to the "Newer Therapeutics." One on "Habit" is naturally followed by "Control," and then "The Uncontrolled Habit," its "Prevention" and "Curative

Treatment." This whole subject is treated in a masterly way, minute detail being avoided and general principles pressed home. One example will suffice :—" It is impossible to consider each form of habit this list of drugs may engender. Each makes its *début* as an agent brimful of sleep, yet void of all offence, in particular of the offence of habit production ; each new claimant by its own pretension denies *ipso facto* the pretensions of its predecessors and prepares the mind for its own fallibility. The plain fact is that one and all they buy sleep at a price, however much they may protest ; also that, although amongst themselves they do differ greatly in the rule of habit production, yet the tendency thereto they all possess inherently. As good householders it is for us to secure the maximum of value at the minimum of cost."

Severest Anæmias : Their Infective Nature, Diagnosis and Treatment. By WILLIAM HUNTER, M.D., Physician, Charing Cross Hospital. Vol. I. With Historical Schemes, Charts and Plates. London : Macmillan & Co. 1909.

THIS is the first of two volumes by Dr. Hunter on the subject of " severest anæmias," and, to quote his own words, it deals with (*a*) the historical development of our knowledge regarding Addisonian anæmia, and its relations to other forms of anæmia ; and (*b*) the ætiological, clinical, pathological, diagnostic and prognostic observations which have satisfied the writer of the claim of this mysterious anæmia to be in reality not merely a form of anæmia, but also a specific infective disease. Volume II., which has not yet appeared, is to deal with " septic anæmias."

The main object of the book is to prove the existence, as a distinct morbid entity, of a form of severe anæmia, identical with that first described by Combe in 1822, and later by Addison in 1855, and to separate this form of anæmia, to which the present writer applies the term " Addisonian anæmia," from other similar severe anæmias with which it has been confounded by Biermer, Ehrlich, and many other writers. In establishing the claim of this disease to be considered as a separate and distinct disease the writer first points out the way in which confusion originally arose, and then

proceeds to discuss its ætiology and pathology. He maintains that the anæmia is caused by some hæmolytic agent absorbed from the intestinal tract, and in proof of this refers to his earlier publications on the subject, and also in detail to the iron content of the different viscera in individuals who have died of the disease. That the hæmolysis occurs in the portal system is shown by the fact that the liver invariably contains in these cases a large excess of iron pigment as compared with the spleen and other organs. Having once established the truth of the hæmolytic theory the writer next discusses the nature of the marrow and blood changes, and maintains strongly that both are purely secondary phenomena—the changes in the marrow being probably of a compensatory nature. He here joins issue with Ehrlich and upsets, we believe completely, that author's view that the anæmia and all other symptoms are the result of a primary marrow change. Argument after argument is used, and with so much force, and possibly we may add with so much repetition, as to make the reader feel that the whole statement of the case partakes of the nature of flogging a dead horse. Having regard, however, to the strength and widely held character of the opposing theory Dr. Hunter is doubtless justified in using every means in his power to establish what he believes to be the truth. The present reviewer may, however, frankly state that he was brought up on Hunter's theory, and that it has ever since appeared to him to be scientifically sound, adequately proved, and, as an explanation of the facts, essentially common-sense. He cannot, however, quite agree with what he believes to be Hunter's views regarding blood examination. While quite admitting that the finding of megaloblasts is not sufficient for the diagnosis of "Addisonian anæmia," he still believes that a blood examination may give precision to one's estimate of the kind and severity of the anæmia one is dealing with, and that repeated examinations afford the surest criterion of the progress of the case towards recovery or the reverse.

Full prominence is given to the glossitic and gastric lesions, the importance of which has so often been emphasised by the author, and a series of well-executed plates illustrates both conditions.

The book is very readable, despite its controversial nature,

and every page bears evidence to Dr. Hunter's mastery of his subject. It may be regarded as the mature exposition of the views held by one who has studied anæmia from the practical point of view for more than twenty years.

Sprains and Allied Injuries of Joints. By R. H. Anglin Whitelocke, M.D., M.C. (Edin.), F.R.C.S. (Eng.); Honorary Surgeon to the Radcliffe Infirmary and County Hospital at Oxford; Lichfield Lecturer in Surgery in the University. London: Henry Frowde, Oxford University Press; Hodder & Stoughton. 1909. 8vo. Pp. xvi + 241.

The author starts by dividing sprains into articular and muscular, and subdivides the former into simple—those where there is no gross lesion of the bone—and complicated or fracture-sprain. He points out the important difference between a fracture-sprain—*i.e.*, a sprain with a fracture involving the joint, and a sprain with fracture—*i.e.*, where the fracture does not involve the joint. The distinction is most important for the determination of the suitable line of treatment. For simple sprain he recommends elastic pressure applied as soon as possible by means of a thick layer of cotton wool and a flannel bandage, the removal and reapplication twice in the twenty-four hours seeming to hasten the absorption. Pressure, according to the author, when properly applied is never uncomfortable. A strong elastic bandage should never be used, as it causes too much compression, and is often uncomfortable. When the fluid effusion has been materially reduced, or for the most part removed, and the torn ends of the bleeding vessels have had time to be effectually sealed off, then, and not till then, should massage be employed. In cases of marked tension in the joint he advises aspiration, not of all the fluid but of enough to reduce the tension; this relieves the pain and allows absorption to commence. If the patient will not allow this, dry heat may be tried.

Ossifying myositis is described as a rare, but unavoidable, complication of some severe sprains, and is explained as follows:—The periosteum is torn off with the muscle from the bone as the result of direct violence or muscular action, and the torn fragments of periosteum—or the osteoblasts themselves

set free in the blood clot between the torn fibres of the muscle and between the muscle itself and the bone—are stimulated by the increased blood supply to the part to the formation of new bone. Practically nothing can be done for these cases beyond avoiding all movement or massage until all tendency to ossific growth has ceased. In some cases where great inconvenience or disability is caused by a more or less complete ossification of a whole muscle, the advisableness of complete excision of the muscle must be considered. The author suggests that in cases where this condition is specially liable to occur—*i.e.*, where a muscle is torn from a bony ridge an early swelling, the result of hæmorrhage, takes place—that the part should be freely exposed by operation and the blood clot removed and the torn fragments of the periosteum cut away.

In the case of fracture of the scaphoid bone of the wrist, of which injury three cases are related, the great importance is clearly shown of differentiating in the treatment between simple sprain and fracture-sprain, as in the latter instance massage and early movements are harmful. Our experience of cases of this nature is the same, for if the fracture is overlooked and the case considered as one merely of sprain, and treated by massage and movements, the disability lasts for months, or even years, whereas if the fracture is recognised and the wrist immobilised, union and perfect recovery may be confidently expected.

The chapters on sprains of the knee and dislocation of the semilunar cartilages are particularly good, and there is a very complete account of their pathology and suitable treatment. The following two chapters are devoted to injuries of muscles and tendons, and the book ends with a chapter on massage and exercises in the treatment of sprains and bruises.

While in no way wishing to underestimate the value of massage, specially in long-standing cases and in the later stages of ordinary cases, the author is strongly of opinion that its immediate use, in the large majority of cases, is not only not necessary, but may be even harmful. According to him the main indications for its use are found in :—(1) All cases of strain or sprain without swelling ; (2) all articular sprains, after the effusion has disappeared, or has nearly disappeared, either spontaneously or after treatment with elastic pressure ;

(3) muscular sprains when all risk of increasing the swelling has passed; (4) all old, long-standing, chronic cases, where pain, stiffness, swelling, matting together of the tissues, or atrophy exist. But in sprains complicated by fracture, separation of epiphyses, and displaced inter-articular cartilages, it must be very cautiously employed. If the movements increase the pain rather than diminish it, they should be withheld, at any rate for a time. It is unusual for pain to be increased in ordinary cases, so that when massage is uncomfortable and badly borne some complication may be suspected.

Synoptic Chart of Cardiac Examination. Arranged by JOHN D. COMRIE, M.A., B.Sc., M.B., F.R.C.P.E., Assistant Pathologist, lately Clinical Tutor, Royal Infirmary of Edinburgh. London: John Bale, Sons & Danielsson. 1909.

DR. COMRIE has rendered a signal service to medical students by designing this well-named synoptic chart of Cardiac Examination. It is most ingenious. An outline diagram of the head and chest forms the front of a thick paste-board slate. The heart and its chambers are indicated by tracings in red. Four circular perforations represent the respective areas of the cardiac valves. Rectangular perforations show the disease to be diagnosticated, the pulse tracing, and the intensity of the dulness on percussion at the right and left borders of the heart.

The heart rhythm is illustrated in a further diagram.

To work the chart easily it should be hung by a cord which is attached to the top, and the corresponding cord at the bottom should be held between the finger and thumb. Then a broad central leather tape is pulled, and by its movements the name of a given heart-disease is made to appear in the rectangular opening at the observer's left hand side of the chart, while the physical signs of the same disease appear simultaneously in the other openings described above.

The diseases of which the chief physical signs are charted are the following:—Mitral incompetence, mitral stenosis, mitral stenosis and incompetence combined, anæmia, aortic incompetence, aortic stenosis, aortic aneurysm, aortic stenosis

and incompetence with mitral incompetence, nephritis and arterio-sclerosis, tricuspid incompetence, mitral stenosis and incompetence with tricuspid incompetence, pulmonary stenosis, and pericarditis.

Fuller information regarding the significance of the physical signs discoverable by inspection, palpation, percussion, auscultation, and examination of the pulse, are given in an accompanying pamphlet of only twelve pages, which is really a well-drawn up guide to the physical examination of the heart and vessels.

The cost of this useful chart is half-a-crown—a profitable investment.

Infected Ears. (*Intrameatal Treatment.*) By F. FAULDER WHITE, F.R.C.S. (Eng.). London: Yellon & Mansfield. 1908. Cr. 8vo. Pp. 100. With Illustrations.

MR. FAULDER WHITE has, in this admirably written little book, put the case for intrameatal treatment of chronic otorrhœa in a most sound and convincing manner. The older aural surgeons, no doubt, erred in performing the radical mastoid operation in too few cases; the modern aural surgeon errs no less in doing the operation in many cases that careful intra-meatal treatment could successfully cure.

Mr. Faulder White lays down the lines on which he considers intrameatal treatment should be conducted. By means of proper and regular irrigation, at times associated with removal of the membrana tympani and other diseased tissues from the middle ear, or what he called "otectomy," he has succeeded in securing a large percentage of cures in cases that in other hands would have been subjected to the risks of a complete mastoid operation. Otectomy he defines as a cutting out from the ear of the diseased area, be it only curetting some granulations, or be it the total excision of the membrane and the ossicles with a portion of the outer otic wall.

We welcome the publication of Mr. Faulder White's opinions and experience as a valuable addition to the literature of otitis media, and we recommend it to the thoughtful consideration of all over-zealous mastoidectomists.

PART III.

MEDICAL MISCELLANY.

Reports, Transactions, and Scientific Intelligence.

ROYAL ACADEMY OF MEDICINE IN IRELAND.

President—J. Magee Finny. M.D., F.R.C.P.I.
General Secretary—James Craig. M.D., F.R.C.P.I.

SECTION OF PATHOLOGY.

President—A. R. Parsons, M.D. Dubl., F.R.C.P.I.
Sectional Secretary—Professor White, Royal Coll. of Surgeons.

Friday, March 12, 1909.

The President in the Chair.

Bronchiectasis.

Dr. James Little exhibited a specimen of bronchiectasis from a man aged twenty-five, a car driver, who thought he had caught cold when driving a party to the International Football Match. He remained at home a fortnight, and then became so ill that he was brought to hospital. He was extremely short of breath and livid. Later he became breathless to the last degree, and had the peculiar hue which Dr. Hudson used to say was a fatal hue in heart disease—a mixture of unaerated blood and jaundice. He lived three days afterwards. His temperature was never elevated, and his pulse was always feeble. Six years previously, when in hospital with scarlatina, it had been noticed that his heart was beating considerably to the right. When he examined him he found the sounds over the back of the right chest were those of large cavities in the lungs. Over the lower lobe of the left lung there was dulness on percussion. At the *post-mortem* the heart was found dragged to the right side by pleural adhesions. Pneumococci were found in the sputum during life. The lower lobe of the left lung was extremely congested, and the cause of death appeared to be pneumonia. The right lung presented

immensely dilated bronchial tubes in every part. The auriculo-ventricular orifices of the heart were much dilated. The left ventricle was considerably dilated and hypertrophied. The right ventricle was extremely dilated and somewhat hypertrophied. The patient brought up a large quantity of purulent spit, but it was not offensive in smell, which was very strange, as he could hardly conceive a lung less able to expel sputum before it decomposed.

Sir John Moore said that if the bronchial tubes were dilated throughout their entire length (cylindrical bronchiectasis) there was less likelihood for putrefaction and consequent fœtor to occur than if dilated through only a portion of their extent (saccular bronchiectasis). The condition of the left base looked like collateral hyperæmia rather than pneumonia, as the temperature was not high and there was congestion, but not consolidation.

Cerebral Tumour.

Dr. Coleman exhibited a brain tumour from a girl aged twenty-
re. For about six months previous to her admission to hospital
t month she had suffered from persistent headache, and for
last three or four months from occasional vomiting. On
mination she had paralysis of the right external rectus, and
ble optic neuritis. To relieve the headache and pressure he
formed lumbar puncture, and removed under considerable
sure 19 cc. of practically normal fluid. She died a week
rwards of gradually progressing dulness passing into coma.
t the *post-mortem* a large tumour was found involving the
ight frontal lobe of the brain. It was distinctly circumscribed, and could easily shell out of the brain substance. Microscopically it was a sarcoma. There were no localising symptoms.

Dr. A. R. Parsons recalled a similar case in which there was no paralysis, but a marked alteration in the mental condition of the patient. Before he died he developed paralysis on one side of his body.

Mr. Wheeler said the specimen was encouraging to the surgeon, as there was no doubt the tumour could be successfully removed if it could be diagnosticated.

Dr. Coleman replied.

Polyserositis.

Mr. W. I. de C. Wheeler exhibited organs from a case of polyserositis. The patient, a man aged thirty-four, had been

sent from Galway with a large ascites. He was fairly healthy and had no other symptoms. Two years previously he had had his right pleura tapped, and when he came to hospital a small left pleural effusion was found and tapped. The ascites increased in hospital. Ten days after admission the abdomen was opened. Covering the liver there was a thick capsule, and over it there were little dips as if peas had been pressed into the surface of it. The liver was not cirrhosed. There were adhesions between the great omentum and the abdominal wall. The Talma-Morison operation was performed. No signs of tubercle were found, and there was no growth of any kind. The operation seemed to relieve the ascites, and he lived eight weeks. He was tapped only once after it, and a very small quantity of fluid was found.

Dr. Harvey said that on opening the abdomen only a small quantity of fluid was seen, but a considerable amount was afterwards found shut off by intestinal adhesions. The peritoneum covering the intestines was everywhere thickened, and in places an abundance of comparatively recent fibrin was matting the coils together. The liver was covered with a thick, opaque white capsule, in which irregular pits were seen, giving somewhat the appearance presented by snow on which drops of water is sprinkled. The surface of the spleen was somewhat similar. The cut surface of these organs was scarcely, if at all, abnormal. The spleen was perhaps a little tough, but not at all markedly cirrhotic. The kidneys were normal in macroscopic appearance; their capsules stripped easily. The thoracic viscera were densely adherent to themselves and to the parietes. It was found possible after some time to isolate the left lung which, in addition to general adhesions, was firmly attached to the diaphragm by a dense finger-like process. The pleura was enormously thickened, and the whole lung when removed looked rather like an enlarged spleen. It was not possible to separate the heart and pericardium from the right lung. The pleura was not so extremely dense as that on the left side, and the right pleural cavity contained a considerable amount of fluid. The pericardium was greatly thickened and closely adherent everywhere to the heart. On section it has a dense cartilaginous appearance. The heart is somewhat atrophic, the endocardium normal. Inoculations were made from the centrifuged fluid in the pleural and peritoneal sacs into four guinea-pigs, but without result. Microscopic sections show the organs to be remarkably free from cirrhosis

except immediately beneath the thickened capsules. These latter are formed of a dense connective tissue which has undergone hyaline change. The organs themselves are fairly normal, but for congestion and some parenchymatous degeneration to be seen in the liver and kidneys. Part of the left lung near the pleural surface shows collapse with fibrosis, while portions of the right lung are emphysematous. To sum up, the organs, with the exception of the above-mentioned changes, were healthy, while their serous coverings were immensely thickened, and such serous cavities of the body as were not totally obliterated were distended with fluid. There was absolutely no evidence of tuberculosis either in the sections or as a result of inoculations.

Dr. Kirkpatrick said he had seen the patient during life, and was very much of the opinion that the multiple serous effusions were probably the result of tubercular infection. He saw him after the operation, and he was perfectly comfortable and better. Then he suddenly died. Both the pathological finding and the clinical history were very remarkable.

Dr. Moorhead said he had seen an almost identical case two and a half years ago. Such cases were of very considerable interest from their rarity.

Mr. Wheeler, in reply, said it had occurred to him that tertiary syphilis might explain the case, but there was no history of such.

Dr. Harvey, in reply, said the remarkable thing was not why the man died, but how on earth he lived. He had seen nothing so dense as the mass of adhesions in his thorax, and it was wonderful how the organs could move at all.

Organs from—

(a) *Pharyngeal Diphtheria ;*

(b) *Case of Heart Disease.*

Dr. O'Carroll exhibited a pharynx from a child who had suddenly died, convalescent from pharyngeal diphtheria. He also exhibited specimens from a woman aged forty-six, who came to hospital apparently in the last stage of heart disease, with dropsy, and some degree of cyanosis. She sank after about ten days. The diagnosis was mitral regurgitation, although there was no distinct murmur.

Dr. Earl said that in the first specimen there was a deep ulcer into the tonsil, and the membrane extended down to the base of the larynx. In the other specimens the heart showed general hypertrophy of all the chambers, with some dilatation. Both

mitral and tricuspid orifices were abnormally large. The valves were healthy. The aorta was much dilated and atheromatous. The right kidney contained an enormous infarction. The other kidney was a very small organ, and contained calculi. The capsule was very adherent, and there was practically no cortex. A myoma was found in the uterus, also an ordinary mucous polypus, and another on the wall. The other organs were healthy.

SECTION OF OBSTETRICS.

President—E. H. Tweedy, F.R.C.P.I.

Sectional Secretary—Henry Jellett, M.D., F.R.C.P.I.

Friday, April 2, 1909.

The President in the Chair.

Exhibits.

Dr. Purefoy showed a small uterus removed for recurrent hæmorrhage from a patient, aged fifty, the mother of some children. She had been curetted in the first instance, and some thickened membrane had been removed. Some improvement was made, but the hæmorrhage recurred. Atmocausis was applied, but after another violent recurrence the uterus was removed. The specimen showed enormously thickened uterine walls, and the position of the endometrium indicated in section by a thin line showed almost complete absence of endometrium.

Dr. Holmes recalled a case of Sir Arthur Macan's in which the hæmorrhage recurred after atmocausis and hysterectomy were performed. The vessels of the uterus were distinctly atheromatous, and it was doubtful if atmocausis would cure in such a condition.

Dr. Jellett expressed great doubt as to the value of atmocausis in cases in which there was no endometrium. The hæmorrhages apparently came from blood vessels more or less diseased, and the superficial effect of atmocausis could not be permanent. He did not see how a second application of atmocausis would produce more than a temporary result as in the first application. He thought there was nothing left in such cases but hysterectomy.

Sir William Smyly said he saw a great theoretical difference between atmocausis and curetting. In the latter they removed the thickened membrane, and hoped that healthy membrane would grow. If not, they had to curette again. Atmocausis,

however, destroyed the membrane and tissues of the uterus, and the depth of the slough depended on the heat of the steam and the duration of the application. If they did not get a sufficient slough the first time they had to repeat the application. In an old woman the obliteration of the uterus, which atmocausis was apt to cause, was desirable. He thought it was a very good method, and it was not so severe as hysterectomy.

Professor Alfred Smith said the effect of atmocausis was rather speculative, and in the great majority of cases they would find the best treatment to be removal.

The President said that on two occasions he "atmocaused" two young women twice each, after they had been curetted ineffectively. The atmocausis failed on the first application and succeeded on the second in each case. He seldom "atmocaused" for more than fifteen seconds. It was better to do too little than too much, and on the second occasion they might give twenty seconds with better results.

Dr. Purefoy replied.

Dr. Sheill exhibited an improved material for ligaturing the umbilical cord.

Dr. Hart, Dr. Purefoy, and Dr. Kidd spoke.

Discussion on the Obstetrical and Gynæcological Reports of the Rotunda Hospital.

Professor Alfred Smith said that there was little difference between the report and those of twelve years ago. Recent reports seemed to have become stereotyped. The present report, as a record of work done, was excellent, but he found that, for example, in the important subject of eclampsia, it showed no advance on what had been long published. They had been encouraged last year to hope for much from pubiotomy, but the subject was not mentioned in the report, and there was no furtherance of their knowledge as to the use of the operation in cases in which it was recommended. It was a most striking fact that the work done in the extern and intern departments was practically the same as regards results. Such a fact reflected great credit on all concerned, and was an immense change from olden times, when it was safer to be confined outside a maternity hospital than inside it. He thought the morbidity was high in operative cases in which the greatest possible care was taken.

Sir William Smyly thought it was a very good thing that the report had assumed a stereotyped form, as it enabled them to

make comparisons and to note advances such as the report showed. In 1886 there were four deaths out of fifteen abdominal sections; in the present report there was one out of ten times that number: that was a remarkable advance. In rupture of the uterus one thing in favour of gauze was that it could be used anywhere. If it only gave as good results as abdominal section it would be more useful to general practitioners. In pelvic deformities it was difficult to impress on men that they would not succeed in extracting a child, no matter what force was used, unless they waited until the head had passed the brim: if it would not pass the brim it was not a case for forceps. He thought the report was the very best he had seen, both as to the matter it contained and the way in which it was brought out.

Dr. Kidd expressed extreme interest in the account of the treatment of rupture of the uterus, as he had seen cases in which unfavourable results had followed an attempt to relieve the patient by abdominal section, and he would be inclined to follow the course adopted by Dr. Tweedy. The case of pernicious vomiting seemed to him to differ very much from the classical symptoms of the condition, as the patient was described as being highly neurasthenic, and having had a fright. There were 235 abortions in the extern department, and only forty in the intern, although the total numbers attended were practically the same in each department. He thought that was due to women staying at home in preference to going to the institution. He observed that there were three and a half times more adherent placentas in the extern than in the intern department. Probably undue efforts were made to expel the placenta, with the result that the uterus was probably made to contract and incarcerate the placenta, and the student may have rushed to the conclusion that it was adherent. He thought the morbidity table served to emphasise the danger of the introduction of the hand into the cavity of the uterus. When internal version was resorted to the mortality increased in accordance with the amount of hand and arm introduced.

Dr. Spencer Sheill said he did not think the death in the case of Cæsarean section could be put down to obstetrical shock. It was significant that the dilated condition of the uterus preceded rather than followed the general shock. Under the headings of "Pernicious Vomiting" and "Eclampsia" it was mentioned in the report that the urine of the patients contained albumen, but there was no mention of the output of urea or ammonia, which

is considered to be of importance in diagnosticating the severity of a case. He (Dr. Sheill) makes a practice of estimating the output of urea on the appearance of the first sign or symptom of toxæmia, and finds it of great value. Also in pernicious vomiting, if the percentage of ammonia reaches eight or ten of the total nitrogen excreted, then it is an indication for emptying the uterus.

Dr. Purefoy said he would not occupy the time of the Section with lengthened remarks on this most excellent report. He wished to point out that there was no figure on the cover or in the body of the report indicating the year to which it referred. The absence of some tables generally present in former reports, and useful for purposes of comparison, was to him a cause of regret. In applying a gauze tampon in cases of rupture, he disapproved the method advised by Dr. Tweedy. The gauze should be introduced gradually, guided by the fingers of the left hand, using enough to act as a drain, but not so much as to prevent the gradual closure of the rent. Dr. M'Clintock's paper on rupture of the vagina is well worthy of perusal.

Dr. Holmes said the carcinoma cases made a remarkable record, and showed how fine the technique of the hospital is.

Dr. Neill said he was present at the Cæsarean section already mentioned. At the first look he thought the patient was suffering from the anæsthetic more than from anything else; but she was a very badly formed woman. He had seen cases of rupture in which hysterectomy had been done unsuccessfully, and he had seen cases in which plugging was very successful. It was creditable to see eight cases of placenta prævia without maternal death, but there were many cases of death of the child. The tearing of the placenta took away any chance the child might have, as it would bleed to death through the placenta.

Dr. Trevor Smith said the case of Cæsarean section was not at all a healthy woman, and the death was due, in his opinion, to the anæsthetic, but not through any fault of the anæsthetist.

Dr. Jellett said there were very few reports of any hospital of the kind that could produce the statistics shown in the tables of eclampsia and Wertheim's operation. They stood out as important proofs of what could be done by careful treatment and successful operation. He thought there was nothing so important as keeping reports stereotyped for purposes of comparison, though not excluding fresh matter. He observed the omission of some tables which were formerly included, such as those on prolapse of the cord, *post-partum* hæmorrhage, and the

sex of twins. In the table of placenta prævia there was a case of a central placenta prævia which was noticeable as to the fœtus being born alive, and he would like to know if the placenta was perforated, and what its position was. He had not done Lawson Tait's operation, in the exact way described by him, for a very long time. He always looked for the levator ani muscle and brought it down. The proportion of cases in which it could not be found was very small.

The Master of the Rotunda, in reply, said he made it his object to take up one or two fresh subjects in each report, and he had dealt with the treatment of eclampsia the previous year. His mortality was 11 per cent., as compared with 35 per cent. twenty years ago. He had not dealt with pubiotomy, as they had not had a case during the year. He dealt with it fully last year, when they had five cases. He preferred Cæsarean section as an easier and safer operation if he got the case in time. His indication for performing pubiotomy arose when he was sure he could not get a living child save by enlarging the pelvis. Ether was used in the case of Cæsarean section that died. It was an extraordinary uterus, thin-walled and flabby, yet without hæmorrhage. The placenta was firmly adherent. Professor Smith was surprised that they should have a greater morbidity after the application of forceps than in normal delivery. They, however, maintained that the less they interfered the smaller the morbidity. In spite of all precautions they could not get as small a rate of morbidity as when they left the patient alone, which proved that they had not reached the perfection of obstetrical technique. They had estimated the free urea and urea in its form of ammonia, but it had not led them to any conclusion. Others were working on the subject, and they would be glad to learn from them. Without doubt the less experienced a man was the more cases of adherent placenta he would meet. He had not seen a table of placenta prævia that did not show a big infantile mortality, and he had seen none that was much less than their own. The child was probably dead before they began to turn. It was usually a premature child, and he was afraid they would always have a high mortality no matter what treatment they adopted. In the central case they went through the placenta. The foot was brought through the rent; the child did not bleed to death, as the placental hæmorrhage was stopped by the leg that was pulled through the hole.

SANITARY AND METEOROLOGICAL NOTES.

Compiled by Sir John Moore.

Vital Statistics.

For four weeks ending Saturday, June 19, 1909.

IRELAND.

The average annual death-rate represented by the deaths—exclusive of deaths of persons admitted into public institutions from without the respective districts—registered in the week ended June 19, 1909, in the Dublin Registration Area and the twenty-one principal provincial Urban Districts of Ireland was 14.2 per 1,000 of their aggregate population, which for the purposes of these returns is estimated at 1,142,308. The deaths registered in each of the four weeks ended Saturday, June 19, and during the whole of that period in the several districts, alphabetically arranged, correspond to the following annual rates per 1,000. In some cases, owing to deaths not having been registered within the week in which they occurred, the rates do not fairly represent the weekly mortality :—

Towns, &c.	Week ending				Average Rate for 4 weeks	Towns, &c.	Week ending				Average Rate for 4 weeks
	May 29	June 5	June 12	June 19			May 29	June 5	June 12	June 19	
22 Town Districts	20.2	16.4	16.7	14.2	16.9	Lisburn -	22.7	27.3	31.8	18.2	25.0
Armagh -	—	6.9	6.9	—	3.5	Londonderry	25.4	21.7	13.3	6.0	16.6
Ballymena	19.2	—	43.1	9.6	18.0	Lurgan -	26.6	4.4	8.9	13.3	13.3
Belfast -	18.7	15.9	16.1	13.2	16.0	Newry -	4.2	8.4	16.8	21.0	12.6
Clonmel -	5.1	10.3	15.4	—	7.7	Newtownards	45.8	22.9	11.4	11.4	22.9
Cork -	19.9	18.5	21.2	16.4	19.0	Portadown -	—	10.3	5.2	10.3	6.5
Drogheda -	12.3	16.3	8.2	12.3	12.3	Queenstown	26.4	26.4	6.6	13.2	18.1
Dublin - (Reg. Area)	21.7	18.2	18.7	15.7	18.6	Sligo -	33.6	14.4	4.8	14.4	16.8
Dundalk -	39.9	12.0	4.0	12.0	17.0	Tralee -	21.1	5.3	10.6	15.9	13.2
Galway -	15.5	15.5	15.5	19.4	16.5	Waterford -	11.7	13.6	13.6	27.3	16.6
Kilkenny -	14.7	14.7	14.7	—	11.0	Wexford -	4.7	4.7	28.0	14.0	12.9
Limerick -	27.3	13.7	8.2	15.0	16.1						

The deaths (excluding those of persons admitted into public institutions from without the respective districts) from certain epidemic diseases registered in the 22 districts during the week ended Saturday, June 19, 1909, were equal to an annual rate of 0.9 per 1,000, the rates varying from 0.0 in sixteen of the districts to 3.9 in Galway—the 5 deaths from all causes for that district including one from enteric fever. Among the 98 deaths from all causes for Belfast are one from whooping-cough and 2 from diarrhœal diseases. Of the 24 deaths from all causes for Cork 2 were from whooping-cough and one from diarrhœa. One of the 5 deaths from all causes for Londonderry was from scarlet fever, and of the 14 deaths from all causes for Waterford one was from whooping-cough.

DUBLIN REGISTRATION AREA.

The Dublin Registration Area consists of the City of Dublin as extended by the Dublin Corporation Act, 1900, together with the Urban Districts of Rathmines, Pembroke, Blackrock, and Kingstown. The population of this area is 398,356, that of the City being 306,902, Rathmines 36,567, Pembroke 28,506, Blackrock 8,759, and Kingstown 17,622.

In the Dublin Registration Area the births registered during the week ended Saturday, June 19, 1909, amounted to 219—108 boys and 111 girls; and the deaths to 128—67 males and 61 females.

DEATHS.

The deaths registered represent an annual rate of mortality of 16.8 in every 1,000 of the population. Omitting the deaths (numbering 8) of persons admitted into public institutions from localities outside the Area, the rate was 15.7 per 1,000. During the twenty-four weeks ending with Saturday, June 19, the death-rate averaged 24.9, and was 1.7 below the mean rate for the corresponding portions of the ten years 1899–1908.

Among the registered deaths there were 3 deaths from measles, 3 from whooping-cough, one death from enteric fever, and 3 deaths from diarrhœal diseases. In each of the three preceding weeks, deaths from measles had been 0, 2, and one; deaths from whooping-cough had been 6, 4, and 4; deaths from enteric fever had been 2, 3, and one; and deaths from diarrhœal diseases had been one, one and one.

There was one death from lobar pneumonia. There were

6 deaths from broncho-pneumonia, and 6 deaths from *pneumonia* (not defined).

Deaths from all forms of tuberculous disease, which had been 31, 28, and 31 in each of the three preceding weeks, declined to 25 in the week under notice. This last figure includes 19 deaths from tubercular phthisis (*phthisis*), 3 deaths from tubercular meningitis, and 3 deaths from other forms of the disease.

The deaths from malignant disease include 2 from carcinoma and 3 from cancer, malignant disease (undefined).

The death of one prematurely born infant was registered.

Of 7 deaths from diseases of the brain and nervous system 2 were of infants under one year of age from *convulsions*.

There were 19 deaths from diseases of the heart and blood vessels, and 8 deaths from bronchitis.

Not one death was attributed to any form of violence in the weekly records of registration.

In one instance the cause of death was "uncertified," there having been no medical attendant during the last illness. This death was that of an infant under one year of age.

Thirty-five of the persons whose deaths were registered during the week were under 5 years of age (20 being infants under one year, of whom 4 were under one month old), and 34 were aged 60 years and upwards, including 15 persons aged 70 and upwards, of whom 4 were octogenarians, and one (a female) was stated to have been aged 90 years.

The Registrar-General points out that the names of the cause of death printed above in italics should be avoided whenever possible in Medical Certificates of the Cause of Death.

STATE OF INFECTIOUS DISEASE IN THE DUBLIN REGISTRATION AREA AND IN BELFAST.

The usual returns of the number of cases of infectious diseases notified under the "Infectious Diseases (Notification) Act, 1889," as set forth in the following table, have been furnished by Sir Charles A. Cameron, C.B., M.D., Medical Superintendent Officer of Health for the City of Dublin; Mr. Fawcett, Executive Sanitary Officer for Rathmines and Rathgar Urban District; Mr. Manly, Executive Sanitary Officer for Pembroke Urban District; Mr. Heron, Executive Sanitary Officer for Blackrock Urban District; Dr. R. A. O'Donovan, Medical Superintendent Officer of Health for Kingstown Urban District; and Dr. Bailie, Medical Superintendent Officer of Health for the City of Belfast.

TABLE SHOWING THE NUMBER OF CASES OF INFECTIOUS DISEASES notified in the Dublin Registration Area (viz.—the City of Dublin and the Urban Districts of Rathmines and Rathgar, Pembroke, Blackrock, and Kingstown), and in the City of Belfast, during the week ended June 19, 1909, and during each of the preceding three weeks. An asterisk (*) denotes that the disease in question is not notifiable in the District.

CITIES AND URBAN DISTRICTS	Week ending	Small-pox	Measles	Rubella, or Epidemic Rose Rash	Scarlet Fever	Typhus	Relapsing Fever	Diphtheria	Membranous Croup	Pyrexia (origin uncertain)	Enteric or Typhoid Fever	Erysipelas	Puerperal Fever	Varicella	Whooping-cough	Cerebro-spinal Fever	Total
City of Dublin	May 29	–	•	◦	3	–	–	6	–	–	2	10	–	•	•	•	21(*a*)
	June 5	–	◦	◦	4	–	–	2	–	5	8	12	–	*	*	•	31
	June 12		◦	*	10	1	–	5	–	1	6	13	–	•	•	■	36
	June 19	–	*	*	8	–	–	5	1	–	5	7	–	•	•	■	26 (*a*)
Rathmines and Rathgar Urban District	May 29	–	◦	◦	3	–	–	3	–	–	–	–	–	*	•	•	6
	June 5	–	•	*	3	–	–	5	–	1	–	2	–	•	*	•	11
	June 12	–	◦	*	5	–	–	2	–	–	1	–	–	•	•	•	8
	June 19	–	*	*	2	–	–	1	–	–	–	–	–	•	■	*	3
Pembroke Urban District	May 29	–	–	–	4	–	–	–	–	–	–	–	–	*	5	–	9
	June 5	–	–	–	1	–	–	2	–	–	–	1	–	*	2	–	6
	June 12	–	–	–	–	–	–	1	–	–	–	1	–	*	11	–	13
	June 19	–	3	–	2	–	–	2	–	–	1	–	–	•	7	–	15
Blackrock Urban District	May 29	–	◦	◦	1	–	–	–	–	–	–	–	–	•	•	–	1
	June 5	–	◦	*	–	–	–	–	–	–	–	–	–	*	*	–	–
	June 12	–	◦	◦	–	–	–	–	–	–	–	–	–	•	•	–	–
	June 19	–	■	◦	–	–	–	–	–	–	–	–	–	•	*	–	–
Kingstown Urban District	May 29	–	*	*	–	–	–	–	–	–	–	–	–	◦	•	–	–
	June 5	–	•	•	–	–	–	–	–	–	–	–	–	•	•	–	–
	June 12	–	*	•	–	–	–	–	–	–	–	–	–	■	*	–	–
	June 19	–	*	•	–	–	–	–	–	–	–	–	–	◦	•	◦	–
City of Belfast	May 29	–	◦	*	2	–	–	5	–	–	1	3	–	*	*	–	11
	June 5	–	•	•	4	–	–	4	2	–	1	3	–	*	*	–	14
	June 12	–	◦	*	3	–	–	3	–	2	1	4	–	◦	•	–	13
	June 19	–	◦	◦	4	–	–	3	1	–	1	6	1	■	•	–	16

(*a*) Not including one case of cerebro-spinal fever reported during the week ended May 29, and one case during the week ended June 19th.

CASES OF INFECTIOUS DISEASES UNDER TREATMENT IN DUBLIN HOSPITALS.

During the week ended June 19, 1909, 8 cases of measles were admitted into hospital, 8 were discharged, and 31 cases remained under treatment at its close.

Ten cases of scarlet fever were admitted to hospital, 22 were discharged, and 64 cases remained under treatment at the close of the week. This number is exclusive of 18 convalescents from the disease under treatment in Beneavin, Glasnevin, the Convalescent Home of Cork Street Fever Hospital.

There was no case of typhus under treatment in hospital during the week.

Four cases of diphtheria were admitted to hospital, 12 were discharged, and 30 patients remained under treatment at the close of the week.

Ten cases of enteric fever were admitted to hospital, 9 were discharged, and 41 cases remained under treatment in hospital at the close of the week.

In addition to the above-named diseases, 11 cases of pneumonia were admitted to hospital, 12 were discharged, and 38 cases remained under treatment at the end of the week.

ENGLAND AND SCOTLAND.

The mortality in the week ended Saturday, June 19, in 76 large English towns, including London (in which the rate was 11.4), was equal to an average annual death-rate of 12.3 per 1,000 persons living. The average rate for 8 principal towns of Scotland was 15.5 per 1,000, the rate for Glasgow being 16.9 and for Edinburgh 16.3.

INFECTIOUS DISEASE IN EDINBURGH.

The Registrar-General has been favoured by A. Maxwell Williamson, M.D., B.Sc., Medical Officer of Health for Edinburgh, with a copy of his Return of Infectious Diseases notified during the week ended June 19. From this report it appears that of a total of 52 cases notified, 25 were of scarlet fever, 14 of phthisis, 6 of diphtheria, 5 of erysipelas, one of puerperal fever, and one of enteric fever.

Among the 370 cases of infectious diseases in hospital at the close of the week were 141 cases of scarlet fever, 61 of measles, 50 of phthisis, 45 of diphtheria, 40 of whooping-cough, 13 of erysipelas, 3 of chicken-pox, 3 of enteric fever, and 2 of cerebro-spinal fever.

Meteorology.

Abstract of Observations made in the City of Dublin, Lat. 53° 20′ *N., Long.* 6° 15′ *W., for the Month of June,* 1909.

Mean Height of Barometer, - - -	30.013 inches.
Maximal Height of Barometer (17th, at 9 p.m.),	30.449 ,,
Minimal Height of Barometer (22nd, at 4 p.m.),	29.236 ,,
Mean Dry-bulb Temperature, - - -	54.8°.
Mean Wet-bulb Temperature, - - -	51.2°.
Mean Dew-point Temperature, - -	47.8°.
Mean Elastic Force (Tension) of Aqueous Vapour,	.333 inch.
Mean Humidity, - - - - -	77.9 per cent.
Highest Temperature in Shade (on 14th), -	67.1°.
Lowest Temperature in Shade (on (7th), -	42.1°.
Lowest Temperature on Grass (Radiation) (7th),	39.0°.
Mean Amount of Cloud, - - -	63.2 per cent.
Rainfall (on 9 days), - - - -	1.963 inches.
Greatest Daily Rainfall (on 23rd), - -	.601 inch.
General Directions of Wind, - - -	N., N.W.,N.E.

Remarks.

A cold month, the depression of temperature being due to a persistence of winds from polar points of the compass. Ireland fared much better than England in the matter of weather, for this island lay well within the limits of an Atlantic anticyclone, which hovered over the Ocean during the first three weeks, whereas areas of relatively low atmospheric pressure lying on the English Channel and over France and Germany brought overcast skies and frequent cold rains to the South and South-east of England. In Dublin the only rainfall registered up to the 18th was .106 inch recorded on the 5th, when this district came for a time within the "sphere of influence" of a baric depression central over the Straits of Dover. In the period from the 18th to the 28th the weather in all parts of the United Kingdom was broken, with clouded skies, frequent rain in the form of heavy thunder showers, low temperature—in a word, unseasonable for midsummer. On the 23rd the rainfall at Kingstown, Co. Dublin, was 1.42 inches, while only .275 inch was recorded at the Ordnance Survey Office, Phœnix Park. This disturbed spell was caused by the sluggish and irregular movements of a large and rather deep atmospheric

depression which spread in from the Atlantic on the 20th, and was still recognisable over Germany on the 30th.

In Dublin the arithmetical mean temperature (55.2°) was below the average (57.9°) by 2.7°, the mean dry-bulb readings at 9 a.m. and 9 p.m. were 54.8°. In the forty-five years ending with 1909, June was coldest in 1907 (M. T. = 55.4°), in 1882 (M. T. = 55.8°), and in 1879 ("the cold year") (M. T. = 55.9°). It was warmest in 1887 (M. T. = 62.3°); in 1896 (M. T. = 61.4°); and in 1899 (M. T. = 61.3°). June, 1909, establishes a record for coldness.

The mean height of the barometer was 30.013 inches, or 0.096 inch above the corrected average value for June—namely, 29.917 inches. The mercury rose to 30.449 inches at 9 p.m. of the 17th, and fell to 29.236 inches at 4 p.m. of the 22nd. The observed range of atmospheric pressure was, therefore, 1.213 inches.

The mean temperature deducted from daily readings of the dry-bulb thermometer at 9 a.m. and 9 p.m. was 54.8°, or 2.7° above the corresponding M.T. for May, 1909. Using the formula, *Mean Temp.* = *Min.* + (*Max.*—*Min.* × .465), the value was 54.7° or 2.7° below the average mean temperature for June, calculated in the same way, in the thirty-five years, 1871–1905, inclusive (57.4). The arithmetical mean of the maximal and minimal readings was 55.2°, compared with a thirty-five years' average of 57.9°. On the 14th the thermometer in the screen rose to 67.1°—wind, E.; on the 7th the temperature fell to 42.1°—wind, N.E. The minimum on the grass was 39.0° on the 7th.

The rainfall amounted to 1.963 inches on 9 days. The average rainfall for June in the thirty-five years, 1871–1905, inclusive, was 1.990 inches, and the average number of rainy days was 15. The rainfall, therefore, and also the rainy days were below the average—the latter especially so. In 1878 the rainfall in June was very large—5.058 inches on 19 days; in 1879, also, 4.046 inches fell on 24 days. On the other hand, in 1889, only .100 inch was measured on 6 days. In 1887 the rainfall was only .252 inch, distributed over 5 days. In 1908, 1.651 inches fell on 12 days.

High winds were noted on only two days—the 6th and the 20th. A solar halo was seen on the 7th and again on the 17th.

The rainfall in Dublin during the six months ending June 30th amounted to 12.061 inches on 84 days, compared with 11.729 inches on 107 days in 1908, 12.336 inches on 108 days in 1907,

12.641 inches on 109 days in 1906, 10.201 inches on 92 days in 1905, 12.817 inches on 102 days in 1904, 15.054 inches on 108 days in 1903, 12.344 inches on 98 days in 1902, 9.352 inches on 80 days in 1901, only 6.741 inches on 67 days in 1887, and a thirty-five years' average of 12.030 inches on 96 days.

At the Normal Climatological Station in Trinity College, Dublin, the observer, Mr. William J. Good, reports that the mean height of the barometer was 30.016 inches, the highest reading observed being 30.441 inches at 9 p.m. of the 17th, the lowest, 29.255 inches at 9 p.m. of the 22nd. The arithmetical mean temperature was 54.8°, the mean dry-bulb reading at 9 a.m. and 9 p.m. being 55.0°. The thermometer rose to 67.2° in the shade on the 18th, and fell to 42.0° on the 7th. The grass minimum was 32.6° on the 7th. Rain fell on 8 days to the amount of 1.914 inches, .530 inch being measured on the 23rd. The number of hours of bright sunshine registered by the Campbell-Stokes sunshine recorder was 158.7, giving a daily average of 5.3 hours. The corresponding figures for 1905 were 217.6 hours and 7.3 hours; 1906, 210.3 hours and 7.0 hours; 1907, 129.4 hours and 4.3 hours; and 1908, 181.4 hours and 6 hours. The mean earth temperature read at 9 a.m. was 56.7° at a depth of 1 foot below the surface of the ground, 53.8° at a depth of 4 feet.

Mr. R. Cathcart Dobbs, J.P., reports that at Knockdolian, Greystones, Co. Wicklow, the rainfall was 3.350 inches on 8 days, compared with 1.710 inches on 9 days in 1908, 3.470 inches on 23 days in 1907, .870 inch on 7 days in 1906, 1.500 inches on 10 days in 1905, 2.280 inches on 10 days in 1904, 1.785 inches on 11 days in 1903, and 3.341 inches on 16 days in 1902. The heaviest rainfalls in 24 hours were 1.140 inches on the 21st, and again on the 23rd. The total fall since January 1 has been 15.345 inches on 72 days, compared with 11.485 inches on 73 days in 1908, 14.090 inches on 92 days in 1907, 12.535 inches on 73 days in 1906, 11.111 inches on 77 days in 1905, 14.307 inches on 94 days in 1904, 17.440 inches on 90 days in 1903, 15.091 inches on 84 days in 1902, 13.670 inches on 75 days in 1901, and only 7.356 inches on 61 days in 1896.

At Clonsilla, Greystones, Co. Wicklow, Mr. A. Victor Price measured 2.63 inches of rain on 8 days—.97 inch being recorded on the 23rd, and .92 inch on the 21st. The mean temperature

was 53.8°, the extremes being—highest, 67°, on the 18th and 19th ; lowest, 42°, on the 7th.

Dr. Launcelot T. Burra reports that at the Royal National Hospital for Consumption for Ireland, Newcastle, Co. Wicklow, rain fell on 7 days to the amount of 3.560 inches, the maximal fall in 24 hours being 1.105 inches on the 21st. The mean temperature for the month was 53.1°, the extremes being—highest, 66.6° on the 18th ; lowest, 41.7° on the 4th. The June rainfalls in recent years at this station were—1903, 2.004 inches on 12 days ; 1904, 2.494 inches on 12 days ; 1905, 2.051 inches on 13 days ; 1906, .831 inch on 13 days ; 1907, 3.703 inches on 27 days ; 1908, 1.761 inches on 10 days.

Dr. Arthur S. Goff returns the rainfall at Lynton, Dundrum Co. Dublin, at 2.62 inches on 10 days, compared with 1.73 inches on 12 days in 1908, 2.67 inches on 27 days in 1907, 1.26 inches on 15 days in 1906, 1.51 inches on 12 days in 1905, 1.22 inches on 14 days in 1904, 1.54 inches on 12 days in 1903, 3.08 inches on 19 days in 1902, and 1.71 inches on 13 days in 1901. The greatest daily fall was .63 inch on the 21st, and .62 inch on the 27th. The mean shade temperature was 56.5°. The thermometric range was from 74° on the 14th to 40° on the 3rd. Thunder and hail showers occurred on the 22nd, thunder and lightning on the 24th.

Mr. R. O'B. Furlong, C.B., supplies the following record of the rainfall at Cloneevin, Killiney :—Rain fell on 9 days to the amount of 2.87 inches, the maximal fall in 24 hours being 1.18 inches on the 23rd. There was an absolute drought from the 6th to the 19th, inclusive. All the rainfall in the month, except .04 inch on the 5th, occurred between the 20th and the 28th. The total rainfall since January 1, 1909, is 12.45 inches on 80 days. The average rainfall for June at Cloneevin, in the 24 years, 1885–1908, is 1.771 inches on 13.2 days.

Mr. T. Bateman reports that the rainfall at The Green, Malahide, was 2.232 inches on 9 days, compared with 1.335 inches on 15 days in 1908, and 2.872 inches on 23 days in 1907. The heaviest fall in 24 hours was .775 inch on the 21st. The mean shade temperature was 53.8°, the extremes being—highest, 71° on the 18th ; lowest, 41° on the 6th. The M.T. was 58.4° in 1905, 57.4° in 1906, 54.2° in 1907, and 55.9° in 1908.

Dr. C. Joynt returns the rainfall at 21 Leeson Park, Dublin, at 1.795 inches on 9 days, .510 inch having been recorded on the 23rd.

The Rev. Arthur Wilson, M.A., reports a rainfall of only 1.18 inches on 14 days at the Rectory, Dunmanway, Co. Cork. On the 20th .34 inch was measured. This was the driest month observed at Dunmanway within the past 5 years. Distant thunder was heard on the 22nd and 24th. The rainfall for the completed six months of 1909 amounts to 25.50 inches.

Mr. W. Miller returns the rainfall at Cork at 2.27 inches on but 11 days—this amount falling short of the average for June by .49 inch. The greatest rainfall in 24 hours was .85 inch on the 21st, when thunder and lightning accompanied torrential rain. The rainfall of the first six months of 1909 in Cork was 17.35 inches, or .63 inch below the average.

At the Ordnance Survey Office, Phœnix Park, Dublin, rain fell in June on 12 days to the total amount of 1.907 inches, .590 inch being registered on the 21st. The duration of bright sunshine was 167.7 hours, the most in one day being 13.5 hours on the 14th, and again on the 15th.

TRAVEL EXHIBITION, OLYMPIA, 1909.

VISITORS to London will be interested in the Travel, Sports, Pastimes and Tropical Exhibition at Olympia, open from July 6 to August 4. Messrs. Burroughs, Wellcome & Co.'s exhibit includes a range of "Tabloid" medical equipments for travellers and some admirably-designed first aid cases for motorists, sportsmen, &c. "Tabloid" medicines are reliable under all climatic conditions. They are, further, presented in the most portable and convenient state that science can devise, and are always ready for administration at a moment's notice. "Tabloid" equipments are provided to meet all requirements. That they are the best for travellers is amply demonstrated by the fact that from Stanley to Shackleton every eminent explorer has carried a "Tabloid" medical equipment. Noteworthy, too, are the "Saxin" tabloids, the very essence of sweetness, which is ideal for travellers, and "Vaporole" aromatic ammonia, which replaces the "smelling bottle." The smallest medicine chest in the world is also on view. Although its dimensions are measured in fractions of an inch, it contains 300 doses, equivalent to 15 parts of fluid medicine.

PERISCOPE.

DUBLIN HOSPITALS' TUBERCULOSIS COMMITTEE.

A SPECIAL meeting of the Committee was held at 76 Grafton Street, on Friday, July 16, 1909. Present: Her Excellency the Countess of Aberdeen; Sir John Moore (in the chair); Dr. M. F. Cox, Dr. Alfred R. Parsons, and Sir William J. Thompson (Hon. Secretary). The minutes of the previous meeting were read, confirmed and signed. Her Excellency stated that on her recent trip to Canada and the United States she had had the opportunity of meeting a number of workers in the anti-tuberculosis campaign which is being carried on so actively in America. Her Excellency was invited to address several meetings in New York, Boston, and Detroit, with the special object of describing how the crusade is being conducted in Ireland under the auspieces of the Women's National Health Association. Great interest was manifested in the movement, and the result has been the formation of committees in the cities above mentioned for the purpose of arousing sympathy amongst American citizens of Irish parentage, and of obtaining their practical co-operation in assisting the work in Ireland. One gentleman—Mr. Robert Collier—has already promised Lady Aberdeen £1,000 per annum for five years, with the object of equipping and starting a tuberculosis dispensary in the city of Dublin in memory of his late father, Mr. P. J. Collier, and to be called after him. The Committee expressed their pleasure at this announcement, and their gratification at the practical results of the meetings addressed by Lady Aberdeen on behalf of the Health Movement in this country. It was agreed by the Committee that the Dublin hospitals should be communicated with, with the object of obtaining their co-operation in the work of the proposed tuberculosis dispensary.

BACILLUS F.

MORGAN'S efforts to discover a specific organism in cases of epidemic summer diarrhœa of infants and young children have been fruitful, even though the result has been the discovery of several different organisms instead of a single specific form. Messrs. Orr, Williams, Murray, and Rundle, working upon material from

the Liverpool City Hospital at Fazakerley, have found yet another microbe in a case of epidemic diarrhœa, and they denote it as the "Bacillus F." Their summary of conclusions is as follows:—"The Bacillus F. was obtained from a case of epidemic diarrhœa. By its cultural reactions it is readily differentiated from the *Bacillus typhosus*. The absence of indol formation separates it from Morgan's No. 1 Bacillus. The presence of well-marked motility is sufficient to distinguish it from Morgan's Bacilli Nos. 3 and 4, and from the dysentery bacilli. The agglutination reactions show that there is a relationship between this organism and the *Bacillus typhosus* and the para-typhoid Bacillus B. The Bacillus F. is able to produce diarrhœa in animals, and can be recovered from their stools. We believe, therefore, that it may be an agent in the production of epidemic diarrhœa. During the summer of 1908 we have further investigated this disease, and find that we have obtained a positive agglutination reaction, varying from 1 in 25 to 1 in 100 in nearly half the cases tested against the Bacillus F. The specificity of this reaction we cannot yet affirm, but we hope later to publish a further report on the material obtained during the past summer." It is clear that much has yet to be learned about the bacteriology of summer diarrhœa of infants, but it is also clear that we already know more than we did a few years since. It is very possible that agglutination tests will assist in differentiating one kind of infective diarrhœa from another, and we would urge that a large series of cases should be thus tested against the Bacillus F.—*The Journal of Clinical Research*, May, 1909.

TINCTURE OF IODINE FOR DISINFECTION OF THE SKIN.

In the *Presse Médicale* for May 26, 1909, M. Guibé has an article on the use of tincture of iodine for disinfection of the skin. He shows from various investigations that have been made on the subject that merely painting the skin with tincture of iodine will produce a better and more lasting disinfection of it than the more complicated methods at present in general use. The penetrating power of the tincture is great, so that the deeper parts of the skin, the ducts of the sebaceous and sweat glands, are thoroughly disinfected. The use of soap and water before the application of the tincture tends only to prevent its penetration and action on the deeper parts, and, therefore, should be abandoned. M. Guibé points out the great advantages of this

method of disinfection in emergency work and also in military surgery. But it requires more extensive trial before we can say whether it is the most reliable method for general work.

IMPORTANT LITERARY NOTICE.

Mr. H. K. Lewis has purchased the remainder of the stock of the New Sydenham Society's publications, comprising the collection of volumes on Medicine and Surgery, the Pathological Atlas, the Lexicon of Medical Terms, and the Atlas of Clinical Medicine, Surgery and Pathology, issued by the Society during the years 1859–1907. Many of the works were of a pioneer character when issued by the Society, and have since acquired a classic and historic importance. The number of copies of each book has been of necessity limited on account of the heavy expense of warehousing a larger stock, and of many of the volumes only a small number remained over.

ALCOHOL INJECTIONS IN NEURALGIAS.

In the *Medical Record* for June 5, 1909, is an article by O. Kiliani, M.D., of New York, on alcohol injections in neuralgias, especially in tic douloureux. He has treated by this means 190 cases of facial neuralgia since the autumn of 1906. Among these cases were five failures. The number of injections necessary to remove the pain varied from two to ten, being three on the average. He injects from 1 to 4 c.cs. of 80 per cent. alcohol without a general anæsthetic. The only surgical accidents he has had are two cases of paralysis—one oculomotor, and one facial, each of which lasted for only three weeks. In answer to the question, "Are these cases cured?" he says, "No," and continues that there is apparently no permanent cure for facial neuralgia, not even removal of the Gasserian ganglion; as he has had to treat six cases for recurrence, four after removal of the ganglion by the best American surgeons, and two after Abbe's operation performed by Abbe himself. Taking into account only those cases where at least eighteen months have elapsed since the injection, 21 per cent. have remained free from recurrence. In the other cases the time of recurrence has varied from three months. A further injection will cure the recurrence, at least temporarily, and there seems to be no reason why the injections should not be repeated indefinitely. His general impression is that the recurrences become rarer, their intensity less, and he expects that a number of these cases which have

recurrences at all will eventually remain free altogether. On the other hand, in a very few cases the recurrent attacks are fully as severe and less prone to yield to treatment. In conclusion, he says that with his unusually large experience he knows of no safer, less dangerous, more reliable method of treating this horrible affliction, while the final results of the method in question may be said to compare favourably with all other operative procedures where a high surgical risk is involved.

RETROGRADE HERNIA (HERNIE EN W.).

In the *Bulletin* of the Royal Academy of Medicine of Belgium for February is a short paper by M. Lauwers, in which he gives the history of a case of hernia of the inguinal variety, in which there were two loops of intestine in the sac separated by a loop in the abdominal cavity. He calls it a retrograde hernia or "Hernie en W." The patient was an elderly man who had a hernia of about the size of an egg for many years; as the result of a sudden violent exertion one day it came down and reached the size of a fœtal head. A doctor who was called in practised taxis for nearly two hours, and succeeded in somewhat reducing the size of the hernia. The following day he was admitted to the hospital in a serious condition, and was operated on twenty-six hours after the accident. At the operation there were two loops of small intestine, each about thirty centimetres long, in the sac, and on enlarging the neck a connecting loop of thirty-eight centimetres was drawn down; though there was no actual gangrene apparent in any of these loops, the changes were much more marked in the abdominal loop than in the two extra-abdominal ones. The patient succumbed on the third day after operation from septic peritonitis. The author says that this case belongs to the variety that M. de Beule has described under the name of secondary "hernie en W," the loop contained in the abdomen having been reduced by the doctor who was first called in, and who reduced the size of the tumour by taxis. That this was the case he thinks is clearly shown by the fact that the mesentery of the abdominal loop was contained in the hernial sac. The double strangulation of the mesentery of this loop explains the fact that the changes were more marked in the wall of this loop than in either of the others, and that the distension also was more marked in this loop. He also points out the great danger of septic peritonitis in these cases owing to the position of the loop in the abdomen allowing the organisms to pass through the damaged wall of the intestine

into the peritoneal cavity without any definite gangrene or breach of surface being found at operation. He quotes some twenty-three other cases which he considers are of the same variety, and concludes by saying that in his opinion strangulation "en W." is, in the vast majority of cases, only an accident in the practice of taxis.

LITERARY NOTES.

Messrs. Rebman, Ltd., 129 Shaftesbury Avenue, London, W.C., announce that they have just ready a new book on "Accidental Injuries to Workmen with reference to Workmen's Compensation Act, 1906," by H. Norman Barnett, F.R.C.S., with an article on "Injuries to the Organs of Special Sense," by Cecil E. Shaw. M.A., M.Ch., M.D., and a "Legal Introduction," by Thomas J. Campbell, M.A., LL.D. As there is at present no book published covering the same ground the appearance of the volume should prove timely, the information contained in it being of the utmost importance, especially to members of the medical and legal professions. A chapter has been devoted to the making of reports for those who are not very familiar with this very important work, in view of the very grave responsibility which the Act places upon medical men, and of the importance of a report being correct as to diagnosis and accurate as to prognosis. Messrs. Rebman have also just issued Professor de Giovanni's "Clinical Commentaries deduced from the Morphology of the Human Body," translated from the Italian by Dr. John J. Eyre, of Rome. The same publishers also state that they have almost ready for immediate publication the English translation of Professor Eugenio Tanzi's "Text-book of Mental Diseases," which has been prepared by Dr. William Ford Robertson, of the Scottish Asylums, Edinburgh, and Dr. T. C. Mackenzie, of the Inverness District Asylum.

NEW PREPARATIONS AND SCIENTIFIC INVENTIONS.

Recent Specialties.

Messrs. Parke, Davis & Co., of Detroit, Michigan, U.S.A., and Beak Street, London, W., have submitted to us samples of the following novelties in therapeutics:—

Adrenalin Tablets No. 2 (P., D. & Co.).—Each of these tablets contains $\frac{1}{200}$ grain of adrenalin, and is, therefore, of the same therapeutic value as 5 minims of the 1 : 1,000 solution. They

are put up in tubes of 25 tablets, which are not only convenient for carrying, but also preserve the properties of the drug. For obtaining a prompt physiological effect, one or more of the tablets, as may be required, may be placed under the patient's tongue, whence the drug is rapidly absorbed, or may be dissolved in sterile water and administered hypodermically or intravenously. The tablets are also useful for adding to solutions of cocain or other analgesic for topical or subcutaneous administration to avoid pain and bleeding in minor surgical operations. They are supplied in tubes of 25 tablets.

Adrenalin and Novocaïn Tablets (P., D. & Co.).—These tablets are supplied in two strengths. No. 187 dissolved in 15 minims of water forms a 2 per cent. solution of novocaïn with 1 of adrenalin in 3,000 ; No. 188, in the same quantity of water, forms a 1 per cent. solution of novocaïn with 1 of adrenalin in 6,000. Experience proves that stock solutions of adrenalin and novocaïn are not so efficient as those made at the moment of use. These tablets, therefore, are not only convenient (they are most readily soluble), but offer the best means of employing novocaïn, which is said to be the equal of cocaïn in anæsthetic power and considerably less toxic, in association with the valuable ischæmic properties of adrenalin, in surgical operations. They are supplied in tubes of 25 tablets.

Adrenalin and Chloretone Suppositories (P., D. & Co.).—Each contains $\frac{3}{200}$ grain of adrenalin (equivalent to 1 in 1,000), and 3 grains of chloretone in a cacao-butter base, and affords a reliable means of obtaining constringent, analgesic, and antiseptic effects in rectal disorders, such as hæmorrhoids, pruritus, ulceration, &c. They are supplied in boxes of one dozen.

Adrenalin Compound Suppositories (P., D. & Co.).—Each contain $\frac{1}{100}$ grain of adrenalin, 3 grains of formidine, $\frac{3}{4}$ grain of cocaïn hydrochloride, and 3 grains of extract of hamamelis. Formidine is a condensation product of iodine, formaldehyde, and salicylic acid, and is an effectual germicide, superior to iodoform, in that it is free from noxious odour. In analgesic power these suppositories are superior to the preceding, and they also include the valuable tonic astringent influence of hamamelis. They are employed in the same class of disorders as specified for the foregoing, and are supplied in boxes of one dozen.

Mercurettes (P., D. & Co.).—Mercurettes are oblong blocks (cleanly and convenient) in which metallic mercury is most intimately incorporated with cacao-butter, and agreeably per-

fumed. Each block contains the amount of mercury present in one drachm of the pharmacopœial ointment, though in a somewhat greater dilution, which lessens danger of irritation to the cuticle. Any quantity that it may be required to use can easily be apportioned by cutting the block. They are primarily intended for the inunction treatment of syphilis, for which purpose cacao-butter provides an agreeable vehicle for the mercury, in every way preferable to the lard and suet basis of the B. P. ointment. But they may also be used for any condition in which the external application of mercury is indicated. Though of firm consistency, vigorous friction quickly causes the mercurette to penetrate the skin. Mercurettes are supplied in boxes of six.

Pituitrin (P., D. & Co.).—Pituitrin is an extract of the infundibular portion of the pituitary gland. It exerts a vasomotor constrictor action very similar to that of adrenalin, but somewhat more prolonged, and an influence on the circulatory system similar to that of digitalis and strophanthus. It very considerably increases the urinary flow. Pituitrin may be given either orally or hypodermically in doses of from 10 to 30 minims four times daily. It is supplied in bottles of one ounce.

"Soloid" Products for Ionic Medication (B. W. & Co.).

The old method of treatment known as cataphoresis or ionic medication has been recently reintroduced, and is recognised to have a distinct field of usefulness. It is finding increasing vogue in this and other countries. The treatment consists essentially in the electrolytic dissociation of drugs, the dissociated ions having the power of penetrating the skin and reaching the deeper tissues. Drugs intended for absorption, applied in the form of liniments or ointments, penetrate the skin with difficulty, but by means of electrolysis they can be introduced with comparative ease. The following "soloid" products have been introduced by Messrs. Burroughs, Wellcome & Co., London, E.C., to facilitate this method of treatment. Each "soloid" product contains 4.37 grains, and when dissolved in one fluid ounce of water gives a 1 per cent. solution. Solutions containing 1 or 2 per cent. of the active ingredient are usually employed in ionic medication. *List*:—"Soloid" cocain hydrochloride, grs. 4.37; "soloid" copper sulphate, grs. 4.37; "soloid" magnesium sulphate, grs. 4.37; "soloid" potassium iodide, grs. 4.37; "soloid" sodium chloride, grs. 4.37; "soloid" sodium salicylate, grs. 4.37; "soloid" quinine bisulphate, grs. 4.37; "soloid" zinc sulphate, grs. 4.37.

In Memoriam.

DANIEL JOHN CUNNINGHAM.

LL.D., Glasg. and St. And. (*Hon. causâ*); M.D., Edin.; D.Sc. and M.D., Dubl. (*Hon. causâ*); D.C.L. Oxon. (*Hon. causâ*); F.R.C.S.I.; F.R.C.S., Edin; F.R.S.; M.R.I.A.; Professor of Anatomy in the University of Edinburgh.

The death of Professor Daniel John Cunningham, which took place at his home in Edinburgh on June 23rd, 1909, has brought the deepest sorrow upon his many friends in Ireland. Our loss is a very personal one, as although it is now some years since he left Dublin, the recollections of his splendid services to Ireland during the twenty years of his residence are so vivid, and the proofs of his sympathy and affection for the country were so striking, even after his departure, that we have never ceased to regard Cunningham as one of ourselves. The manner in which he identified himself with Ireland, made her interests his own, and devoted his genius and energies to her service, makes him one of the most remarkable outstanding figures in the life of Dublin in recent years. No man has worked more strenuously for the advancement of medical education and scientific research, and few have achieved so much success in teaching or exercised so powerful an influence over those with whom they have come in contact.

Daniel John Cunningham was the son of the Rev. John Cunningham, and was born at the Manse, Crieff, Perthshire, on April 15, 1850. His school days were spent at Crieff Academy, and leaving school, before he began the study of medicine, he devoted a few years to work in an office in Glasgow. He entered the University of Edinburgh in 1870, and here his genius, energy, and enthusiasm won him much distinction, and gave promise of the brilliant future which was in store for him. From those who had the privilege of being students with him we learn of the extraordinary influence which

CUNNINGHAM already possessed, and of the stimulus which his character and attractive nature exercised on his fellow-workers. He early came under the notice of Sir William Turner, who was then Professor of Anatomy, and after graduation he was selected by him as one of his demonstrators. In 1876 he was appointed Senior Demonstrator of Anatomy, a post which he continued to hold until he came to Dublin in 1882. In later years he always spoke of those past years with pride and pleasure, and they were probably some of the most strenuous in his strenuous life. In addition to his arduous duties in the University, he found time to deliver a systematic course of lectures in Physiology at the Royal Veterinary College, and to carry out a large amount of original work in anatomy. The early papers written by CUNNINGHAM at this time are of great interest, as they show that, from the first, with him no labour or effort was too great to obtain exact information, and that when once sure of his facts, he possessed the imagination and the necessary courage to recognise clearly the significance of his observations. We see, in these his early contributions to anatomical literature, the philosophical treatment of the subject, and the lucid style which make his later more important "memoirs" such delightful reading.

In 1882 CUNNINGHAM was appointed to the Chair of Anatomy in the School of the Royal College of Surgeons, Ireland. The Council of the Royal College is to be congratulated on its foresight and on the service which it rendered to medical education in this country by selecting such a man and in bringing him to Ireland. His charming personality and the splendid character of his teaching at the College of Surgeons at once secured for him many friends and admirers in Dublin, and in the next year, upon the appointment of Prof. Alexander Macalister to the Chair of Anatomy in the University of Cambridge, CUNNINGHAM was invited to accept the Chair of Anatomy and Chirurgery in the University of Dublin.

CUNNINGHAM came to Trinity College at a very critical period in the history of her Medical School. The old medical buildings had long been inadequate for the require-

ments of her students, and the authorities of the College had become alive to the fact, thanks largely to the energy and zeal of the late Rev. Doctor Samuel Haughton, F.R.S., Senior Fellow of Trinity College. The old spirit which regarded the School of Physic as something foreign to, and outside the University, was dying fast, and like the wall which for so long a period had separated the Medical School from the rest of the College, was soon to completely disappear. It is needless to say that in every movement for the advancement of the School, and for the better housing and equipment of its departments, CUNNINGHAM took a leading part, and assisted Haughton ably and enthusiastically. These gifted and able men became fast friends. and to their combined efforts the school of Trinity College owes much—probably more than even she herself recognises. During the next few years a large part of the existing Medical School was built, and not only was the Anatomical Department largely extended, but the main medical block, as it at present exists, was erected. In the equipment of his own department it was his aim and ambition to make it a perfect machine for teaching and research, and as it stands to-day, the Anatomy School is a monument to the genius and energy of CUNNINGHAM—his foresight and powers of organisation are to be recognised in almost every detail.

The work CUNNINGHAM accomplished in connection with the building and equipment of the new school is, however, small and insignificant in comparison with the results which followed from the spirit of progress he breathed into everything to which he devoted himself. By his inspiring example, and by his evident anxiety to assist others, he created in his students and assistants an appreciation and a desire for the advancement of anatomy and zoology. His help and advice were always freely at the disposal of all who came to ask for them, and those who consulted him received such encouragement and assistance as he alone knew how to give. He was ever most generous in bestowing praise where he deemed it deserved, and his approval was always highly esteemed. No one had to a greater degree than he the rare gift of encouraging men and making them

proud of their work and of stimulating them to further effort by his keen appreciation and kindly criticism. To the ordinary student he was ever the sympathetic teacher and leader, and it was recognised that the interests of the School and of its students were always his first consideration. The care which he took to make his lectures as attractive and as efficient as possible won for him universal respect and admiration, while his genial and sympathetic manner gained him a warmth of affection and esteem such as is very rarely given by students to their teacher.

One of the most striking characteristics of CUNNINGHAM was the *esprit de corps* which he encouraged among his students and the wonderful interest and pride which he took in the early history of the School, and in the men who had gone before him. He took a keen pleasure in telling of the conditions under which in less fortunate days anatomical work had been carried on in Dublin, and in explaining how former teachers had overcome the great difficulties connected with the practical study of anatomy. The delightful historical anatomical addresses which he occasionally delivered were most highly appreciated, and helped to communicate something of his own enthusiasm to the members of his class. The charming relationship which existed between the great teacher and his students was perhaps most strikingly manifested at the receptions and smoking concerts which he held annually at his own house, in connection with the opening meetings of the Dublin University Biological Association. No one who had the privilege of being present is likely to forget the joyful friendship and affection which were characteristic of those memorable evenings.

The scientific investigations carried out by CUNNINGHAM cover so many fields of research and are so numerous that it is not possible, in the space at our disposal, to give a complete list even of their titles. His magnificent memoir on the Convolutions and Sulci of the Cerebrum and on the manner in which they arise in the fœtus is a monument of labour, careful observation, and philosophical reasoning. New and improved methods of preserving specimens have led, it is true, to modifications in some of his results, but the

work will remain classical on the subject with which it deals. His paper on the Cranium and Brain of the Microcephalic Idiot is in many ways an even more remarkable study. It exhibits in a most striking manner his fearless and open mind. As he himself often explained in conversation, he set out with the idea that the condition was merely one of arrested development, but, little by little, as he carefully reviewed the facts and arguments he was forced more and more into the position taken up by Carl Vogt, and finally he became the strongest and most pronounced advocate of the view that, at least as regards the brain, the condition must be regarded as atavistic. The far-reaching consequences of such a conclusion did not for one moment escape him, but when once he was convinced of his facts his courage did not fail. His memoirs on the Lumbar Curve, on the Skeleton of Cornelius Magrath, on the Form of the Stomach, and on the Eyebrow Region of the Skull, among others, are exquisite models of what anatomical memoirs should be. His facts are ever most clearly stated and illustrated, the various explanations that have been put forward are fairly discussed, and when we read the author's own conclusions we feel that little remains to be said on the subject with which he deals. We always recognise that he has not failed to take into account any apparently outside considerations which might throw light upon the matter in hand. CUNNINGHAM'S Manual of Practical Anatomy is undoubtedly the best work of its kind in the English language, and is, perhaps, the most perfect teaching manual ever written. Every illustration, every page, and every sentence is characteristic of its writer. The book is written not merely to teach but to rouse an interest in dissection, and each line has been carefully weighed and considered from the standpoint of the student for whom it is intended. His large Text-book of Anatomy is an example of the magnificent powers of organisation and leadership which he possessed and which enabled him to induce men, often holding very different views, to work together for a common object.

In 1892, when Trinity College celebrated its Tercentenary, the confidence which the late Provost, the Rev. Doctor Salmon,

F.R.S., and the Members of the Board, felt in CUNNINGHAM was shown by their asking him to act as one of the secretaries responsible for the organisation of the festival. It would be difficult to over estimate how much of the conspicuous success and dignity of the celebrations were due to his energy, foresight, and genius.

Outside his work in the University CUNNINGHAM had many interests, and the scientific bodies of Dublin share with Trinity College in a huge debt of gratitude to him. The Royal Irish Academy, the Royal Dublin Society, the Royal Zoological Society of Ireland, and the Royal Academy of Medicine in Ireland, among other institutions, afforded fields for his activities. He was a member of the Council and a Vice-President of the Royal Irish Academy, and some of his most important monographs were published in the Cunningham Memoirs and Transactions of that body. For many years he was one of the secretaries of the Royal Dublin Society, took an active part in its scientific meetings, and did much to mould its policy; but he was perhaps most intimately associated with the work of the Royal Zoological Society. On the Council of the "Zoo" are to be found many of his greatest friends, and in its meetings, probably more than in any other work outside Trinity College, he took the keenest interest. During the many years that he acted as secretary to this Society, enormous advances were made in improving the housing of the animals and in making the beautiful gardens popular. His love for the animals was extraordinary, and his great interest in their welfare acted as a stimulus to those directly in charge of them. Shortly before he left Dublin he was made President of the Royal Zoological Society of Ireland.

We must not omit to mention the important work which he found time for in connection with the foundation of our Royal Veterinary College, or his service on the Royal Commission appointed to inquire into the working of the hospitals during the South African war, and on the Royal Commission concerned with Irish Fisheries. Looking back upon his all too short life we feel amazed at his vast energies and wide interests, and we recognise the absolute impossibility of even alluding to the greater number of his

achievements. The numerous honours which were conferred upon him by scientific Societies and Universities give but a slight indication of the esteem and honour in which he was held, and of the diversity of his attainments.

In 1903 CUNNINGHAM was called back to Edinburgh to undertake the charge of the Anatomical Department, relinquished by his old teacher, Sir William Turner on accepting the Principalship of the University. He left Dublin with extreme regret. He did not, however, feel justified in rejecting the call and claims of his Alma Mater, although both he and the members of his family felt that in leaving Dublin they were severing many strong ties which bound them to Ireland. It is a gratification to know that in his new surroundings he did not forget his old colleagues or lose his deep affection for Trinity College. The protest which he organised against Mr. Bryce's scheme for university reform in Ireland, and which was signed and presented to the Government by the Principals, Professors and Lecturers of the Universities of Scotland, is one of the most powerful and effective documents for which he was responsible, as well as a most striking tribute of his affection for the University of Dublin. CUNNINGHAM'S conspicuous foresight led him to clearly recognise that Mr. Bryce's scheme, if it became law, would lead to the destruction of Trinity College.

Dublin University has had few so noble examplars of unselfish devotion to her interests, and there are few men to whom she is so deeply indebted, and of whom she is so justly proud. His memory will ever be affectionately honoured in the School for which he did so much, and which he so dearly loved.

A. F. D.

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PART I.

ORIGINAL COMMUNICATIONS.

ART. VII.—*Valvular Disease of the Heart with Anomalous Symptoms.* By JAMES LITTLE, M.D., Physician to the Adelaide Hospital.

ALTHOUGH we are accustomed to consider that the examination of the heart by auscultation and percussion renders it possible for the physician to make a diagnosis with great precision, those of us who habitually make examinations after death must be conscious that during life we are liable to come to erroneous conclusions even as to the physical condition of the valves and the walls, and still more frequently as to the true nature of the process which has produced the structural change, and I thought that it would be interesting to put on record a case which was carefully watched during life, and yet in which the changes found after death came more or less as a surprise.

On October the 3rd, 1908, a woman, aged thirty-one, was admitted to the Adelaide Hospital, Dublin, under my care. She had borne five children, the last born more than two years

previously. Though her husband was a respectable man, earning good wages, and she appeared to have had a comfortable home, she looked haggard and prematurely old. She had been troubled with palpitation for six years. Her feet and legs had been somewhat swollen for two months, and her abdomen had got enlarged during three weeks before admission. She came to the Hospital because she was breathless on exertion, and because she felt very tight and uncomfortable in the upper part of the abdomen. The liver was manifestly swollen, and with distended jugulars pointed to overfulness of the right cavities of the heart.

When I saw the patient the day after her admission the legs were no longer swollen, the distension of the abdomen seemed due to flatulence, as a resonant note was produced all over it by percussion. The urine was free from albumen, and fair in quantity. On listening over the heart a loud systolic murmur was audible over the entire cardiac region, and a diastolic murmur was at first to be heard along the sternum. When we came to inquire as to any former illness which might have set up the cardiac disease, we ascertained that when six years old she had been in the Adelaide Hospital with scarlatina. From the first the patient had a symptom not usual in heart disease, except where rheumatism is actually present. She was nearly always bathed in perspiration. The application of six leeches over the liver gave great relief to her feelings of oppression and to her breathlessness. I did not give her any of the drugs which specially influence the heart, but merely kept her in bed. Her temperature all this time was, as a rule, subnormal, and her pulse between 80 and 90.

At the end of a week the flatulent distension of the abdomen rather suddenly disappeared. At the end of a fortnight she was allowed up preparatory to going home. In the third week, however, she became mentally affected; she would not speak; she refused her food, disliked to see her husband, and at night was sleepless and noisy.

The influence of drugs was curious; a hypodermic of morphia made her excited; the one two-hundreth of a grain of hydrobromide of hyoscin distinctly quieted her; trional in a dose of twenty grains secured sleep. All this time the sweatings, to which I have already alluded, continued, and in particular she often awoke out of a troubled dream bathed in perspiration.

Her temperature began to rise a little at the end of the third

week after her admission to hospital. For three days it did not pass 99°, then it rose to 100°, then to 101.8°, and the following day to 105°; two days later, on the day of her death, it fell to 102°. A few hours before death, though she took nourishment freely, she was pulseless, and I could not hear any murmur.

When the temperature began to rise, and the perspirations were profuse, and the cerebral symptoms were so marked, it occurred to me that I was dealing with a septic endocarditis, and in this suspicion Dr. Bewley and Dr. Peacocke, whom I asked to see the patient, I think coincided.

The body was opened twenty-eight hours after death. On exposing the heart we were immediately struck by its extreme tension, and to the finger it felt as if distended to the last degree. The pericardium was injected, and the organ weighed 1lb. 5 ozs.—more than twice the usual weight in a woman. When the great vessels were severed a quantity of perfectly fluid blood escaped.

On opening the left ventricle, its walls were found greatly thickened, but its cavity was small. It presented the condition to which in former times we gave the name "concentric hypertrophy."

When water was poured into the aorta it did not escape through the valve, and when the finger was pressed against the valvules either from the aorta or from the ventricle, it encountered a dense calcareous and spiculated mass, which appeared as if it must have entirely closed the orifice of the vessel.

The left auriculo-ventricular orifice would admit only one finger; the two portions of the mitral valve were welded together, and the ring which they formed was thickened. The left auricle was greatly dilated, and its coats were thickened.

The right side of the heart presented somewhat similar appearances. The cavity of the ventricle was enlarged and its walls were thickened; the right auriculo-ventricular orifice with difficulty admitted the tips of two fingers, and the valvules forming the tricuspid valve were welded together just as those forming the mitral valve had been. There was nothing like septic endocarditis: the aortic valvules, instead of being eaten away by necrotic change, had been converted into calcareous structures.

I presume the whole mischief began while the woman, then a child, was convalescing from scarlatina, but why we

had the persistent sweating, and towards the end of life the mental disturbance and the elevated temperature, is, to my mind, unexplained.

ART. VIII.—*Hæmophilia.*[a] By J. E. M'CAUSLAND, M.D. Dub., B.Ch., B.A.O.; House Surgeon to the Royal City of Dublin Hospital.

HÆMOPHILIA is the name applied by a euphemism not uncommon to a condition or diathesis the essential characteristic of which consists of an unusual tendency for excessive and persistent hæmorrhages to occur either spontaneously or as the result of trauma. These hæmorrhages may take place from the mucous membranes and skin, and are also found subcutaneously in the joints and in the deeper tissues.

Ætiology.—The ætiological conditions which predispose to or produce hæmophilia are still obscure, except for the well-established fact of its hereditary transmission. A great mass of evidence now exists to prove that it is, in the majority of cases, a family complaint, being handed on from mother to son in much the same way as are certain nervous diseases—for example, pseudo-hypertrophic muscular paralysis—that is, the daughter of a bleeder is, as a rule, healthy herself, but transmits the disease to her son, while her daughters, themselves healthy, may transmit the disease to their sons. Direct transmission from father to son is very rare, but has been known to occur. Thomson and Miles, in their "Manual of Surgery," Vol. I., p. 266, give a table of four generations of a family. In this table thirteen cases of hæmophilia occur, all of which are in males, and are transmitted through the females. In some cases it is impossible to get any history pointing to a tendency to bleeding in the family. The only conclusion to be drawn from this is that the disease has arisen *de novo* in the particular case observed. When this has taken place it has been noted more than once that two or more members of the same family are sufferers, and often in a most severe form,

[a] A Thesis read for the Degree of Doctor of Medicine in the University of Dublin, June, 1909.

while, on the other hand, only one member of the family may be affected. Thus among seven cases, of which I have a record in two, no family history whatever could be obtained. One of these—a most aggravated case—was a gentleman aged thirty, of independent means and well acquainted with his genealogical tree. He, after considerable research and many consultations with his relatives, was utterly unable to find any trace of a previous case in his family within the preceding three generations. He had two brothers older than himself and two sisters, all quite healthy. Both brothers and one sister were married, and all had healthy families. In the other case, a boy, aged fourteen, who on several occasions had subcutaneous and joint hæmorrhages, an absolute denial of any previous trace of his disease was obtained from the mother. Her own father, brothers and two sons were in every way normal individuals, while the patient, her third and youngest child, had exhibited the tendency since birth.

The disease, as might be expected from its method of transmission, is almost invariably found in males, but well marked cases have been found in females. Thus Blaker (*British Medical Journal*, 1904, Vol. I., p. 189) has reported the case of a female child who had apparently inherited the diathesis, for her grandmother and two aunts on the female side had all been bleeders. I myself know of a case in a middle-aged woman. This patient during childhood presented the typical features of hæmophilia, suffering at different times from epistaxis, bleeding from the gums and excessive hæmorrhage following slight wounds. The tendency apparently disappeared about puberty, for the patient suffered no inconvenience with her periods or during a confinement. When about thirty years of age she, however, nearly lost her life after the operation of curetting, and since then has frequently bled excessively from slight scratches, and occasionally from the mucous membranes. Her periods, though rather heavy, were passed through up to the menopause without danger.

As regards racial peculiarities, cases of hæmophilia have been recorded in almost every country and climate, but there seems to be a general impression that Jews present a larger

number of cases in proportion to their population than other peoples. This is certainly borne out by the records of cases published in the various journals in the last few years. Negroes, on the other hand, are unusually exempt, as has been pointed out by many observers, notably Steiner. This writer reports one case in a negro, but points out that the stock of this individual was probably mixed with European blood.

Symptoms.—As a rule the symptoms of hæmophilia show themselves in early life, and the disease has even been known to produce symptoms in the fœtus. Not all the recorded cases of early hæmophilia are, however, to be accepted as such, as many of the records show that the symptoms noted were due either to sepsis or to Winckel's or Buhl's disease. Occasionally the first hæmorrhage occurs after puberty, but this is very rare. It is generally stated that the disease tends to improve after adult age is attained, but this is by no means proved, and out of the cases which have come to my own personal knowledge four were over thirty years of age. There is no doubt that fewer cases are met with in adults, but this is probably due to the early deaths of many bleeders, and also to the increased care which will be taken by anyone in adult life who is aware of his unfortunate tendency.

The period of childhood to a bleeder is one mass of dangers. Circumcision, cutting the teeth, and the numerous small accidents peculiar to children in early life are all sources of special danger. Later on the ordinary zymotic diseases may prove unusually severe and the rashes may become hæmorrhagic, while in the case of scarlatina ulceration of the glands in the neck or ulceration of the throat may give rise to a severe and even fatal hæmorrhage. Vaccination, on the other hand, is stated to be unattended with any risk, and in this view I quite agree.

The tendency to hæmorrhage seems to vary at different times, and it is often noticed that the occurrence of hæmorrhage in one part of the body seems to predispose to others taking place at the same time.

Of all the hæmorrhages epistaxis is the most common, and next comes hæmorrhage from the mouth and teeth, this latter

being exceedingly difficult to control. Next in frequency come external traumatic hæmorrhages, and less often hæmaturia, hæmatemesis and melæna.

The joint affections are very troublesome and may occur frequently. Usually more than one joint is affected at the time, a point which may be useful in diagnosis, when a history is wanting or indefinite. The joint becomes painful, hot and swollen, and the tissues over it are reddened. There is no subcutaneous œdema, but distinct periarticular swelling may be felt. After a severe hæmorrhage of this sort the temperature may rise to 102° or 103° F., the pulse becoming rapid and small, and sometimes hæmic murmurs are developed in the heart. In some cases recent hæmorrhages into the subcutaneous tissues closely stimulate cellulitis or acute osteomyelitis. In the absence of a definite history, ecchymoses over other parts of the body should be looked for. As a rule the rapidity of the onset and the multiplicity of the affection is enough to distinguish it from tubercular disease. Suppuration in a joint has been described, but mercifully this is one of the rarest complications.

Various prodromata are said to occur before the onset of the spontaneous hæmorrhages, such as the general signs of plethora, but they are not always present. In one case certainly when the patient felt in good health and particularly lively, in a very short time a hæmorrhage was nearly certain to occur. On the other hand, I do not remember the same patient ever suffering from a hæmorrhage when he felt run down. Insanity is also said to be unusually common amongst bleeders, and is often of the melancholic type. In these cases the traumatic hæmorrhages are much to be feared, and sometimes most difficult to control. The same individual may vary very much from time to time, however, in the amount of bleeding that follows from a wound, and in this connection it may be said that the same fact is true of normal individuals, who, moreover, vary greatly in their bleeding tendencies as regards one another. It would, in fact, be almost possible to select a series of individuals who would fill in the wide gap that exists, as far as a hæmorrhagic tendency is

concerned, between the perfectly normal and the hæmophilic individual.

In a paper of this length it is impossible to mention the various complications of the disease, and also impossible to discuss the effect of other diseases on the hæmophiliac.

Pathology.—Post-mortem reports on cases are comparatively few in number and incomplete, and in many of them no striking characteristic appearances are noted. When death, as is usual, has taken place from hæmorrhage the ordinary appearance of extreme anæmia of all the organs and tissues of the body is observed. Localised areas of necrosis have been found in different organs, but not constantly, and not to a greater extent than could be accounted for by the loss of blood and general want of nutrition. Subcutaneous and peritoneal hæmorrhages or hæmorrhages into the different hollow viscera may be observed of course, and frequently one or more joints that have been the site of hæmorrhage, at a previous period, will present changes somewhat resembling those of arthritis deformans.

According to Koenig the changes in the joints consist of :—

(1) Hæmarthrosis—*i.e.*, the simple exudation of blood into the joint cavity.

(2) Arthritis.—As the blood is being absorbed fibrous tissue may pass into the clots from each side, resulting in organisation of the entire clot and often in fibrous union, to a greater or less extent, of the opposed articular surfaces. At the same time erosion of the cartilage and lipping of the joint may begin, leading finally to—

(3) Articular Deformity.

The condition of the vascular apparatus varies a good deal. Virchow in a series of cases found an unusually small heart, and on that fact founded his theory that the cause of the disease was a want of development of that organ and the larger arteries. It appears probable, however, that the recurring anæmia to which these persons are liable would be quite sufficient to account for the lack of development, not only in the heart itself, but also of that in other organs. Changes in the smaller vessels have also been described, such

as an insufficiency in the muscular coat and also an unduly rich capillary network, but none of these changes are constant.

Blood.—No constant change, in either the morphological or the chemical characters of the blood has yet been demonstrated. Indeed most writers are quite agreed that, apart from the changes common to all secondary anæmias, no morphological change of any sort is present. In the few cases in which I was able to examine the blood the red blood corpuscles presented no change. The white blood corpuscles were also normal in appearance and number, but a differential count showed a slight eosinophilia. The greatest percentage number of eosinophiles found in any one case was 6.4 out of a total white count of 7,800 white cells per cubic millimetre. In another case the average count showed 6 per cent. of eosinophiles, while in a third case the percentage was 4.2. In this last case the number fell considerably during the secondary stage of a syphilitic infection during which there was a leucocytosis of neutrophiles, but the percentage rose again as soon as the tertiary stage was reached. The number of cases in which it was my privilege to assist in examining the blood has been, of course, far too small to come to any definite conclusion, but in the three above-mentioned cases it may be more than a coincidence that there was a definite eosinophilia.

As regards the chemical character and coagulability of the blood much uncertainty seems to exist. There is, I believe, a widely spread opinion that the lime salts and fibrin-forming substances of the blood are deficient, but this opinion seems to be formed on insufficient data. As far as I am aware the only grounds for believing the calcium salts to be deficient rest on the clinical facts that calcium chloride, either given internally or applied locally, appears in many cases to lessen the hæmorrhage and to hasten coagulation. The addition of lime, however, to normal blood will equally shorten the coagulation time. That the fibrin or fibrin-forming substances are deficient is equally unproved in spite of the writings of the older investigators. All recent observers state that the fibrin in the clotted blood is present in normal or even increased amount, one writer even placing it as high as 5 per cent. The blood

also seems to coagulate in about the normal time, or at any rate the time of coagulation does not seem to be sufficiently delayed to account, in itself, for the continuance of the hæmorrhage. The clot formed, however, is usually softer and less elastic than normal, and it has been more than once noticed that it exudes very little serum, even after the lapse of twenty-four hours, probably owing to the imperfect contraction of the fibrin. These last facts apparently point to some chemical change, but of what nature is at present quite unknown. After a hæmorrhage has continued for some time the blood may fail to coagulate at all, which phenomenon is quite the reverse to what takes place in a normal individual under similar circumstances, as in the latter case the blood exhibits an increased power of coagulability. If clotting does take place after prolonged hæmorrhage the clot is frequently unusually pale and soft.

The blood platelets have not yet been accurately studied in this or indeed in any other disease. That they increase in number after bleeding is undoubted, but the same is true of all secondary anæmias.

The hæmopoietic tissues have also been inadequately investigated. Slight overgrowth of the splenic pulp has been noticed in one case, while in another the thymus gland was absent. The liver has in all recorded cases been found to be normal, and this is of especial interest, as it has been shown, experimentally, that the cutting off of the circulation from the liver deprives the blood of its power of coagulation.

Pathology.—In discussing the morbid anatomy of the disease most of the theories concerning its pathology have been referred to, and as none of them yields a complete and satisfactory explanation of the symptoms it is unnecessary to do more than summarise them here. The more important theories that have been advanced are as follow :—

(1) Virchow's theory that the disease has been caused by a hypoplasia of the heart and larger vessels.—The hypoplasia is, however, inconstant, and its probable cause in those cases where it occurred has already been mentioned. There is more evidence in favour of the view that the change is

one of the smaller vessels and capillaries. Thus, it is often noted that bleeding is more persistent from a lacerated than from a clean cut wound when both are of about the same depth and extent. Again some bleeders suffer entirely from hæmorrhages from the mucous membranes and not at all from the skin, and in one recorded case only from wounds above the level of the throat. These last two facts point to a localised change, which in universal bleeders may be only universal in the capillaries of the body.

(2) It has been suggested that there may be a disproportion between the bulk of the blood and the capacity of the vascular system. The pathological evidence for this consists in occasional finding of hypertrophy of the heart and of necrotic changes in the vessel walls, but this is obviously not sufficient. Also the blood pressure has not been shown to be very high, nor have the blood vessels been shown to be of a specially large calibre. The only evidence in favour of this view is that bleeding often stops spontaneously after the loss of a certain quantity of blood.

(3) Chemical Changes in the Blood.—These have already been dealt with, and it is only necessary to add that a failure of the fibrin to contract would lead to an imperfect obliteration of the capillaries, and this, combined with deficient contractability in the blood vessels themselves, could readily lead to prolonged bleeding.

(4) The theories of the existence of a toxæmia and of some alteration in the nerve supply to the blood vessels are at present too vague to need more than mere mention, while the view that congenital cyanosis and hæmophilia are closely related is apparently without foundation.

Treatment.—The best treatment of all consists in careful prophylaxis by avoiding, as far as possible, traumata of every form, whether accidental or surgical. If any operation becomes absolutely necessary the patient should be placed on a mixture containing calcium chloride for some time in advance. The value of this is, however, doubtful, and in any case I have seen it apparently was of no benefit. If hæmorrhage is once established local measures should be adopted, as patients are

unwilling to submit themselves to a purely expectant treatment. In the only really severe case in which I was associated during actual hæmorrhage, all the various styptics were tried with little or no result. The various preparations of the suprarenal gland, adrenalin, hemisin, renaglandin, have all been warmly praised and just as warmly denounced. They apparently give temporary relief in mild cases, but the bleeding almost always recurs. Calcium chloride applied locally is also of very little use, though perhaps the best routine treatment, for want of a better, is cold compresses soaked in adrenalin and the above salt. The local application of ice sometimes does good, while for bleeding from the gums a paste composed of resin ʒiv, phenol ʒiij and chloroform ʒij may be tightly applied. Fibrin ferment is apparently of no value, while the application of perchloride of iron and similar styptics—such as alum—is in general to be avoided. In the severe case I saw the last, however, was the only application that appeared to do any good during a severe hæmorrhage from the gums. Gelatine injections have been recommended, but it is questionable if the remedy is worth the risk of the hæmorrhage that might follow the subcutaneous injection. Local applications of gelatine are of no value. Thyroid extract internally and also dilute sulphuric acid and sodium sulphate are all recommended, but I have never tried them. When collapse occurs large saline enemas, and even transfusions, may become necessary. Luckily, however, the hæmorrhage often ceases when the patient is apparently on the point of death, and recovery then may be rapid. For the large subcutaneous ecchymoses that occur ichthyol and collodion are very efficacious, while for the joint hæmorrhages absolute rest and the local applications of cold. Opium may be necessary to relieve pain, but it should be given by the mouth, as in one case I saw very severe subcutaneous hæmorrhage occur twelve hours after a hypodermic injection.

In conclusion, I would wish to express my indebtedness to Dr. Gillman Moorhead for his permission to refer to the cases mentioned in this paper, and also for his assistance in preparing the paper itself.

ART. IX.—*Clinical Reports of the Rotunda Hospital.*[a] By E. HASTINGS TWEEDY, F.R.C.P.I., Master; with the co-operation of J. R. FREELAND, M.D., L.A.H.; and BETHEL A. H. SOLOMONS, M.B., Univ. Dubl., Assistant Masters.

(*Continued from page 100.*)

GYNÆCOLOGICAL REPORT.

DURING the past year 489 patients were admitted to the Gynæcological Wing of the hospital, this being about the same as in the previous year. The vast majority of these were admitted for operation, as those patients for whom palliative measures can be adopted are treated in the Out-patient Department. The lack of accommodation is a serious difficulty, and precludes us from admitting a great number of deserving patients. As in our former Report, we describe operations under the different heads, and many of these which occur in separate tables are operations performed on the same woman. There has been a gratifying increase in the number of major operations performed, and there is every indication of still greater activity. This increase cannot be viewed without a certain degree of anxiety, on account of the extra expense involved. Our present Gynæcological Wing is worked on uniquely economical principles, and with the aid of only two fully qualified nurses for day work. The sister is not only required to help at all operations, to assist at all dressings, and to look after the welfare of the patients, but is absolutely responsible for the sterilisation of all operating material and management of the theatre. It can easily be understood that work is carried out by this small staff at high pressure.

Six patients died. In one of these no operation was performed. (*Vide* Mortality Table, Case 4.) Of the other five, A. G. was admitted to the hospital in a very enfeebled condition. Tubercular peritonitis was diagnosticated; the abdomen was opened. The patient seemed relieved for a few hours, but death ensued the following day; this, we need hardly say, had no connection whatever with the operation. (*Vide* Table VII., Case 5.) Our only fatality after Wertheim's

[a] Read in the Section of Obstetrics of the Royal Academy of Medicine in Ireland, on Friday, March 5, 1909.

operation was due to the breaking away of a severed ureter from its attachment to the bladder. (*Vide* Table II. B, Case 14.) A case to which particular attention should be drawn is one in which cancer was found in the pedicle of an ovarian cyst which had been operated on six months previously. The special interest in the case lies in the fact that the tumour, which was removed in the former operation, when examined was found to be a simple papillary cyst. (*Vide* Table VI., Case 3.) The fifth fatal case was one in which a very adherent retro-peritoneal liposarcoma had been removed two and a half years previously. When the abdomen was opened the second time, several large tumours were in evidence, extending as far as the under surface of the liver, and involving that organ; it was found impossible to remove the entire tumour, and even at the autopsy the liver had to be extirpated before the entire mass could be removed. The portion which was left subsequently sloughed, and death ensued from sepsis ten days later. (*Vide* Table VII., Case 10.) The last fatal case was of a patient who was admitted in a dying state and in great distress from an abdomen distended with ascitic fluid, the result of alcoholic cirrhosis. Paracentesis had frequently been performed, and this at shorter and shorter intervals. The abdomen was at last opened in the hope that the fixing of the omentum to the under surface of the liver and parietal peritoneum might to some extent alleviate symptoms. (*Vide* Table VII., Case 13.)

The increase in the number of operations for cancer of the uterus calls for some comment. Our view totally differs from that usually expressed. We hold that the operation is not contraindicated in many cases, though they offer no prospect of a permanent cure. The prospect of a permanent cure in any case of cancer of the uterus must remain for a long time a matter of great uncertainty. The operator who can number many non-recurrences after an interval of four or five years must be considered strangely fortunate in obtaining early cases. On the other hand, experience has impressed us with the great relief obtained by operation in cases absolutely hopeless in respect to non-recurrence.

We do not suggest to either the patient or her friends that we can hold out the least prospect of a non-recurrence of the disease. Our desire is rather to relieve distressing symptoms, to cause freedom, and, perhaps, permanent relief from fœtid and ill-smelling discharges. It is a well-known fact that cancers not exposed to septic influences are seldom painful, and a patient may die with freedom from pain from the most extensive cancers of the liver or other internal organ. For this reason we would not hesitate to remove a painful or necrotic area, even though secondary deposits were known to be present in the liver. It has been urged against this view that discredit has been thrown on operative work when relief is not permanent and cancer soon recurs. For our own part we can only say that we have not observed this, but, on the contrary, have found unfailing gratitude on the part of the patient for renewed hope and relief given; and the same holds good in respect to the friends. Would any surgeon hesitate to amputate a leg for sarcoma, even though recurrence be bound to follow? and why, therefore, should the rule that holds good in general surgery not also be the same for the gynæcologist? As to the steps of the operation, we endeavour to follow Wertheim in every case, though, obviously, modifications are frequently necessary. We remove enlarged glands, but do not prolong the operation unnecessarily in the search for them. The main object is to remove as much vagina and parametrium as possible.

Case 14, Table II. A, Cases 1 and 2, Table VI., illustrate in a most marked manner the ever present difficulties in diagnosis which beset the abdominal surgeon. In the case of B. C. the abdomen was opened for the removal of a myoma, and all present were startled to discover that the uterus closely resembled that of pregnancy. Not without the greatest hesitation was it decided to make a small exploratory incision, and thus decide the matter. An interstitial myoma, fortunately, came into view. Had the case turned out to be a pregnancy, the wound could hardly, with safety, have been closed without first emptying the uterus.

In the case of M. D. an interstitial myoma was diagnosticated

by bimanual examination, though doubt existed as to whether the case was one of pregnancy, and this doubt received expression in the written diagnosis; through a most lamentable oversight the suspicion of pregnancy was forgotten, and laparotomy was performed, to find once again a uterus presenting all the characters of pregnancy. The abdomen was closed without further manipulations. The woman made an uninterrupted recovery, and departed without aborting. Shortly after this, M. M. was admitted to the hospital, and interstitial myoma was diagnosticated. Here again, when the abdomen was opened, the uterus presented so much the appearance of pregnancy that it was decided not to continue the operation. At the expiration of a month it became obvious that the case was not one of pregnancy, and a fibroid uterus was successfully removed per vaginam. These three similar and puzzling cases all occurred within the space of four weeks, and are the first and only cases in which we have experienced this difficulty in diagnosis.

Operations for the cure of backward displacements of the uterus were performed sixty times. Of these Kelly's operation of ventro-suspension was the method adopted on forty occasions; ten of these patients were sterile, and it was interesting to note, especially in these cases, the fact that the tubes were occluded. This alone seems to be a great point in favour of the operation, for this fact can certainly not be diagnosticated by even the most experienced gynæcologist. Vaginal fixation was performed fifteen times, and Alexander-Adams' operation five times—the former usually in patients who had symptoms of retroversion, and who required other plastic vaginal work; the latter, for what we considered to be a simple retroverted uterus.

The technique is still the same as that which we described in our former reports, and it continues to be satisfactory.

Notes on Some of the Cases.

PERINÆUM AND VAGINA.

Complete perinæorrhaphy was performed once according to the method of Lawson Tait. Incomplete perinæorrhaphy was

performed sixty-two times by Lawson Tait's method; colpoperinæorrhaphy eleven times—nine by the method of Hegar, and twice by that of Martin. The case of cicatrix of the vagina was treated by forcible dilatation and plugging with iodoform gauze. There was one case of vaginal cyst, which was excised; four fistulæ were operated on—one vesico-cervical and three vesico-vaginal fistulæ. Anterior colporrhaphy was performed on fourteen occasions—eight of these being associated with the operation for vaginal fixation, and six for that of prolapsus uteri. Fifteen cases necessitated anterior colpotomy—fourteen of these being associated with the operation for vaginal fixation. Posterior colpotomy was undertaken six times—four for small ovarian cyst, one for pyosalpinx, and one in connection with the operation for vaginal fixation.

CERVIX.

A modification of Dudley's posterior division was undertaken on eighteen occasions, and was associated with curettage for sterility or dysmenorrhœa.

UTERUS.

Abdominal Hysterectomies.

Case 3, Table II. A.—L. B. Interstitial and sub-serous myomata first removed. Excessive hæmorrhage made hysterectomy necessary.

Case 4, Table II. A.—K. R. Large right intra-ligamentous sub-serous myoma. A large amount of hæmorrhage from adhesions.

Case 6, Table II. A.—C. R. Uterus riddled with myomata. Hysterectomy by Doyen's method.

Case 8, Table II. A.—H. O. Hæmatosalpinx at outer end of right tube—pus at inner end; below this tube was an intra-ligamentous cyst the size of an orange. Firm adhesions on this side, with an extra-tubal abscess in the pouch of Douglas. Other side sound. Gauze drain. Complete hysterectomy.

Case 10, Table II. A.—A. Q. Uterus much elongated. Subserous myoma so intimately connected with the cervix that complete hysterectomy had to be performed. Both ovaries left.

Case 15, Table II. A.—M. K. Complained of dysuria; at times had complete retention. A large cystic fibroid, freely movabl in Douglas' pouch. Supravaginal hysterectomy was performed, owing to injury to uterus in removal of the myoma.

Case 16, Table II. A.—H. H. Multiple myomata. Hæmorrhage too great to allow myomectomy.

Abdominal Hysterectomies—Malignant Disease.

Case 3, Table II. B.—E. D. Epithelioma of cervix. Uterus very adherent to bladder, which contained cancerous mass. It was impossible to get completely outside the cancer. Wertheim's operation performed.

Case 4, Table II. B.—M. H. Epithelioma of cervix. Uterus very adherent to bladder, which was perforated in attempting separation; the tear was stitched. The abdomen was closed with catgut. Vagina was divided very low down, owing to infiltration. Patient coughed very severely eight days later, and burst open her wound; this was reunited with through-and-through silk-worm gut sutures. There was a vesico-vaginal fistula, and the abdominal wound became septic. Both these conditions were healed when patient left the hospital six weeks after operation.

Case 12, Table II. B.—M. Q. Uterine wall friable, and perforated in preliminary curettage. Abdominal wound became septic, but was healed before patient's departure from hospital.

Case 13, Table II. B.—L. R. This was a case which was sent to the hospital as one of twin pregnancy. Two solid ovarian tumours were diagnosticated. When the abdomen was opened it was found that there were two large masses, each larger than a full term fœtus, and malignant in appearance; these were removed, after which total extirpation of a fibroid uterus was performed.

Case 14, Table II. B.—M. E. This was the only fatal case out of thirteen Wertheim's operations performed during the year. During the operation the ureter was found to be involved in the cancerous process, and two inches had to be resected; the end was implanted in the bladder by means of sutures, and evidently these separated, for patient got signs of peritonitis three days after the operation, and died the following day.

Notes on the other cases of malignant disease will be found by referring to Table II. B.

MYOMECTOMY.

The conservative operation of myomectomy is performed whenever possible. In cases 2, 3, 4, of Table IV. there were several great myomata, which were removed, and the uterus was left.

TUBES AND OVARIES.

The abdomen was opened twenty-three times for operations on the tubes and ovaries, besides which, as will be seen by reference to Table I., many resections were performed as accessories to other operations. All these recovered.

Case 14, Table V.—The case of M. M. was very troublesome, the cyst being retro-peritoneal and very adherent. It was not possible to remove the entire cyst, although the uterus was extirpated in the endeavour. Drainage, therefore, was carried out through the vagina.

MISCELLANEOUS OPERATIONS.

Our consulting surgeon, Mr. Heuston, kindly operated on Cases 1, 4, and 11, Table VII.

Case 4, Table VII.—E. B. The chief interest in this case lies in the fact that a year after the operation patient returned with a tumour in her abdomen, which, when removed by Mr. Heuston, turned out to be a malignant ulcer of the pylorus.

Case 5, Table VII.—A. G. This patient was moribund on admission, and operation was resorted to as a last resort.

Case 9, Table VII.—A. M. This was a very large suppurating renal tumour, which when examined was found to be an hypernephroma. Patient made an uneventful recovery.

Case 10, Table VII.—M. M. This was a case of recurrence after two and a half years' freedom from the disease. The autopsy revealed marked cirrhosis of the liver and chronic interstitial nephritis.

MORTALITY

Case 3, Table VI.—E. C. This was the case of cancer recurring in the pedicle of an ovarian cyst, to which we referred in our opening remarks. When the abdomen was opened on this occasion it was found that nothing could be done. Patient died from shock on the following day.

The other cases which died in the Gynæcological Wing have already been referred to, and will be found in Tables II. B. VII. and VIII.

General anæsthetic was administered on 317 occasions with no death:—

Ether - - -	248
Chloroform - - -	30
Ether and Chloroform	24
Nitrous Oxide and Ether	15
Total	317

For the compilation and arrangement of these Reports I am indebted to my two Assistant-Masters.

Dr Freeland has made himself responsible for the Maternity Report and Dr. Solomons for the Gynæcological Report.

Table I.—*Showing kind and number of Operations.**

Vulva and Perinæum—	
Labial abscess	1
Lacerations of perinæum (74)—	
Complete	1
Incomplete	73
Urethra and Bladder—	
Caruncle	2
Prolapse of urethra	2
Vagina—	
Cicatrix	1
Cyst	1
Fistula (4)—	
Vesico-cervical	1
Vesico-vaginal	3
Anterior colporrhaphy	14
Anterior colpotomy	15
Posterior „	6
Rectum—	
Prolapse of bowel	1
Hæmorrhoids	2
Cervix—	
Trachelorrhaphies and amputations (78)—	
Schroeder	56
Sanger	13
Emmet	7
Circular	2
Posterior divisions	18
Carcinoma	10
Uterus—	
Curettage	225
Dilatation with tents	9
Fibrous polypus	8
Fibrinous „	1
Ventro-suspension	40
Vaginal fixation	15
Uterus—*con.*	
Alexander-Adams	5
Myomectomy (8)—	
Abdominal	7
Vaginal	1
Hysterectomy (35)—	
Supra-vaginal	16
Wertheim	13
Complete	4
Vaginal	2
Cæsarean section	1
Tubes and Ovaries—	
Ovariotomies	14
Resection of ovary, with other operations	10
Resection of ovary for abscess	1
Oöphorectomy, with other operations	12
Tubal pregnancy	4
Pyosalpinx	5
Resection of tubes	3
Salpingo-oöphorectomy	6
Exploratory Laparotomy—	
See Table VI.	3
Miscellaneous—	
Herniotomy (5)—	
Ventral	2
Umbilical	1
Femoral	1
Inguinal	1
Appendicectomy	3
Nephrectomy	1
Cholecystectomy	1
Tubercular peritonitis	4
Excision of lipoma	1
Talma's operation	1
Retro-peritoneal sarcoma	1

* 119 Abdominal Sections were performed.

TABLE No. II. A.—*Abdominal Hysterectomies.*

No.	Name	Date	Age	Disease	Operation	Result	Remarks
1	M. G.	31/12/'07	43	Fibroid uterus, cystic right ovary	Supravaginal hysterectomy	Recovered	Married, multipara; right ovary removed
2	M. S.	15/1/'08	32	Fibroid uterus	Supravaginal hysterectomy	,,	Single; both ovaries left.
3	L. B.	5/3/'08	32	,,	Supravaginal hysterectomy	,,	Single; both ovaries left. Myomectomy performed first.
4	K. R.	12/5/'08	40	Intraligamentous subserous myoma	Supravaginal hysterectomy	,,	Married, multipara; left ovary removed.
5	B. D.	19/5/'08	45	Fibroid uterus	Supravaginal hysterectomy	,,	Married, multipara; both ovaries removed.
6	C. R.	29/5/'08	39	Adeno-myoma of uterus	Complete hysterectomy	,,	Widow, nullipara.
7	U. M.	16/6/'08	46	Fibroid uterus	Supravaginal hysterectomy	,,	Married, nullipara; uterus retroverted.
8	H. D.	16/6/'08	33	Hæmatosalpinx intraligamentous cyst	Complete hysterectomy	,,	Married, multipara; both ovaries left.
9	M. B.	31/7/'08	50	Fibroid uterus	Supravaginal hysterectomy	,,	Single; both ovaries left.
10	A. Q.	24/7/'08	39	,,	Complete hysterectomy	,,	Single; both ovaries left.
11	S. S.	4/8/'08	38	,,	Supravaginal hysterectomy	,,	Married, nullipara; both ovaries left
12	M. C.	7/8/'08	44	,,	Supravaginal hysterectomy	,,	Married, multipara; both ovaries left.
13	K. S.	28/8/'08	28	,,	Supravaginal hysterectomy	,,	Married, nullipara; both ovaries left.
14	B. C.	2/9/'08	38	,,	Supravaginal hysterectomy	,,	Married, nullipara; both ovaries left.
15	M. K.	15/9/'08	46	Cystic fibroid uterus	Supravaginal hysterectomy	,,	Married, multipara; both ovaries left.
16	A. H.	20/10/'08	36	Fibroid uterus	Supravaginal hysterectomy	,,	Married, nullipara; both ovaries left.
17	M. T.	20/10/'08	30		Supravaginal hysterec-	,,	Married, nullipara.

				Diagnosis	Operation	Result	Remarks
1	E. F.	12/11/'07	48	Adeno-carcinoma of body	Wertheim's -	Recovered	Married; 1 abortion 5 years previously; recurrence in 10 months.
2	S. C.	7/1/'08	40	Fibroid uterus and cancer of left ovary	Supravaginal hysterectomy and left ovariotomy	„	Married; 3-para; last pregnancy 14 years before; some malignant nodules in mesentery and posterior abdominal wall.
3	E. D.	7/4/'08	60	Epithelioma of cervix	Wertheim's	„	Married; 10-para; last 18 years before.
4	M. H.	10/4/'08	54	Epithelioma of cervix	„	„	Married; 9-para; last 16 years before; abdominal wound septic and vesico-vaginal fistula; both healed before discharged.
5	M. F.	26/5/'08	50	Epithelioma of cervix	„	„	Married; 6-para; last 12 years before; recurrence in 5 months.
6	B. O.	20/6/'08	52	Large fibroid undergoing sarcomatous & cystic degeneration	Supravaginal hysterectomy	„	Married; 13-para; last 8½ years before.
7	A. J.	26/6/'08	52	Epithelioma of cervix	Wertheim's -	„	Married; 8-para; last 18 years before.
8	K. C.	21/7/'08	40	Epithelioma of cervix	„	„	Married; 9-para; last 4 years before.
9	L. L.	18/8/'08	32	Epithelioma of cervix	„	„	Married; 2-para; last 14 years before; recurrence in 6 months.
10	M. D.	1/9/'08	48	Adeno-carcinoma of body	„	„	Married; nullipara.
11	S. M.	4/9/'08	50	Epithelioma of cervix	„	„	Married; 2-para; last 15 years before.
12	M. Q.	25/9/'08	66	Epithelioma of cervix	„	„	Married; 9-para; last 28 years before.
13	L. R.	29/9/'08	32	Fibroid uterus and carcinoma of ovaries	Complete hysterectomy and double oöphorectomy	„	Married; nullipara.
14	M. E.	13/10/'08	43	Epithelioma of cervix	Wertheim's -	Died, *see* Table	Married; 4-para; last 10 years before.
15	B. D.	28/10/'08	40	Adeno-carcinoma of body -	„	Recovered	Single; abdomen refilled with ascitic fluid; peritonium studded with cancerous nodules.
16	W. R.	30/10/'08	50	Epithelioma of cervix	„	„	Married; nullipara.

TABLE No. III.—*Vaginal Hysterectomies.*

No.	Name	Age	Date	Disease	Operation	Result	Remarks
1	M. M.	36	11/11/'07	Fibroid uterus	Clamps, hemisection -	Recovered	Married; 1-para; pregnancy 9 months before. Laparotomy had previously been performed.
2	E. D.	30	9/1/'08	Double hæmatosalpinx	,, ,,	,,	Married; 3-para; last 5 months before.

TABLE No. IV.—*Myomectomies.*

No.	Name	Age	Date	Disease	Result	Remarks
1	A. C.	45	25/2/'08	Interstitial myoma -	Recovered	Married; 3-para; last pregnancy 4 years before.
2	L. J.	40	11/9/'08	,, ,,	,,	Single.
3	A. B.	35	15/9/'08	Interstitial and subserous myomata	,,	,,
4	M. R.	29	22/9/'08	Interstitial myoma -	,,	,,
5	A. H.	50	3/10/'08	,, ,,	,,	Single; appendicectomy and left salpingo-oöphorectomy also performed.

TABLE No. V.—*Ovariotomies and Salpingectomies (Abdominal).*

No.	Name	Age	Date	Disease	Operation	Result	Remarks
1	F. G.	34	12/11/'07	Ruptured tubal pregnancy	Right salpingectomy	Recovered	Isthmial rupture.
2	K. M.	48	6/12/'07	Large ovarian cyst -	Right ovariotomy -	,,	Single; left ovary resected.
3	M. A.	32	10/12/'07	Large dermoid cyst -	,,	,,	Single.
4	L. R.	37	10/2/'08	Tubal pregnancy -	Left salpingectomy -	,,	Isthmial variety; resection of right ovary.
5	M. C.	23	20/2/'08	Left tubo-ovarian abscess	Left salpingo-oöphorectomy	,,	Married; nullipara.
6	F. H.	38	2/4/'08	Carcinoma of left ovary	Left ovariotomy -	,,	1-para.
7	A. S.	37	22/4/'08	Right dermoid cyst	Right ovariotomy -	,,	Nullipara.
8	M. C.	20	6/5/'08	Left tubo-ovarian abscess; right pyosalpinx	Left salpingo-oöphorectomy; right salpingectomy	,,	5-para.
9	J. L.	21	7/5/'08	Large ovarian cyst -	Right ovariotomy -	,,	Single; other ovary resected.
10	B. S.	35	6/5/'08	Tubal pregnancy -	Left salpingectomy	,,	Married; nullipara; right ovary resected.
11	N. H.	28	8/5/'08	,,	Right salpingectomy	,,	3-para.
12	A. M.	25	10/7/'08	Large ovarian cyst -	Right ovariotomy -	,,	2-para; pedicle twisted.
13	S. S.	32	11/8/'08	Large ovarian and sub-peritoneal cysts	Double ovariotomy	,,	Single; supravaginal hysterectomy and appendicectomy performed.
14	M. M.	25	14/8/'08	Dermoid cyst	Large cyst removed	,,	Single, impossible to remove the entire cyst, which was retro-peritoneal and very adherent; drained through vagina

TABLE No. V.—*continued.*

No.	Name	Age	Date	Disease	Operation	Result	Remarks
15	F. H.	38	3/8/'08	Dermoid cyst -	Right ovariotomy -	Recovered	Single.
16	M. B.	28	8/9/'08	Tuberculosis of tubes	Double salpingo-oöphorectomy	,,	Single.
17	N. G.	40	11/9/'08	Double pyosalpinx -	Double salpingo-oöphorectomy; left salpingectomy	,,	Nullipara; great adhesions.
18	L. L.	28	18/9/'08	Dermoid cysts -	Double ovariotomy -	,,	Nullipara.
19	E. M.	41	2/10/'08	Large ovarian cysts	,,	,,	1-para.
20	L. G.	30	6/10/'08	Pyosalpinx -	Left salpingectomy -	,,	1-para; left ovary resected.
21	T. R.	26	20/10/'08	Large ovarian cysts	Left ovariotomy -	,,	1-para.
22	H. O.	27	23/10/'08	,,	Double ovariotomy -	,,	Part one tube left.
23	L. R.	32	29/10/'08	Malignant ovaries; fibroid uterus	,,	,,	Nullipara.

TABLE No. VI.—*Exploratory Laparotomies.*

No.	Name	Date	Age	Condition	Result	Remarks
1	M. M.	11/11/'07	36	Fibroid uterus - -	Recovered	1-para. See Notes, *ante.*
2	M. D.	1/5/'08	26	Pregnant uterus - -	,,	3-para. See Notes, *ante.*
3	E. C.	20/12/'07	36	Carcinoma from stump of ovarian pedicle - -	Died	Nullipara. See Notes, *seq.*

Table No. VII.—*Miscellaneous Operations.**

No.	Name	Date	Age	Disease	Operation	Result	Remarks
1	L. L.	26/11/'07	41	Inguinal hernia	Herniotomy	Recovered	Hernia ; partially strangulated.
2	A. B.	17/12/'07	30	Tubercular peritonitis	Laparotomy	,,	Married ; nullipara.
3	E. C.	9/1/'08	55	,,	,,	,,	Two gallons of fluid removed.
4	E. B.	1/2/'08	43	Cholelithiasis	Cholecystectomy	,,	Patient returned a year later with cancer of stomach.
5	A. G.	13/2/'08	25	Old tubercular peritonitis	Laparotomy	Died	Patient was moribund on admission.
6	T. B.	3/3/'08	19	Tubercular peritonitis	,,	Recovered	Married ; nullipara.
7	R. J.	3/3/'08	30	Ventral hernia	Herniotomy	,,	Married ; 3-para.
8	M. G.	2/6/'08	30	Umbilical hernia	,,	,,	Married ; 2-para.
9	A. Mc.	6/6/'08	57	Hypernephroma	Nephrectomy	,,	The tumour had been growing for 3 years.
10	M. R.	16/6/'08	48	Recurrent retro-peritoneal sarcoma	Laparotomy	Died	Patient had been operated on 2½ years previously.
11	M. K.	2/9/'08	48	Femoral hernia	Herniotomy	Recovered	Hernia was irreducible.
12	M. F.	9/10/'08	40	Ventral hernia	,,	,,	Patient had been operated on 12 years previously.
13	E. G.	23/10/'08	48	Cirrhosis of liver	Talma's operation	Died	Great ascites.

* This includes only important major miscellaneous operations.

TABLE No. VIII.—*Mortality.*

No.	Name	Age	Date of Operation	Died	Cause of Death	Remarks
1	E. C.	36	20/12/'07	21/12/'07	Shock (?)	*See* Table VI., Carcinoma in stump of ovarian pedicle.
2	A. G.	25	13/2/'07	14/2/'07	Shock	*See* Table VII., Tubercular peritonitis.
3	M. R.	48	13/6/'08	23/6/'08	Sepsis	*See* Table VII., Retroperitoneal sarcoma.
4	C. M.	40	—	18/7/'08	Cardiac disease	Patient entered hospital moribund.
5	M. E.	43	13/10/'08	17/10/'08	Peritonitis	*See* Table II. B., Carcinoma of uterus
6	G. G.	48	23/10/'08	24/10/'08	Shock	*See* Table VII., Cirrhosis of liver, moribund on admission.

PART II.

REVIEWS AND BIBLIOGRAPHICAL NOTICES.

Movable Kidney : a Cause of Insanity, Headache, Neurasthenia, Insomnia, Mental Failure, and other Disorders of the Nervous System ; a Cause also of Dilatation of the Stomach. By C. W. Suckling, M.D. (Lond.), M.R.C.P. ; Consulting Physician to the Queen's, to the Children's, and to the Orthopædic and Spinal Hospitals, &c. Birmingham : Cornish Bros., Ltd. 1909. Pp. 155.

In this book Dr. Suckling explains how he has been gradually forced to the conclusion that movable kidney is the cause of a great number of varying symptoms, many of which are of a nervous character. He even goes so far as to say that no patient should ever be committed to an asylum without being first examined for movable kidney, and that if it is found that this condition exists, the operation of nephropexy, bilateral if necessary, should be performed with the hope of curing the symptoms of insanity. We have no doubt that very various and serious symptoms are often produced by a movable kidney, and that the condition is in many of these cases not suspected, and we know from experience that patients, usually comparatively young women, can by this simple operation of nephropexy often be saved from a life of semi-invalidism. But we also know that many people, more usually elderly women, are the subjects of movable kidney, and suffer no inconvenience from it. So that very careful judgment must be exercised in all cases before recommending an operation. We are glad to see that he says what we have always believed to be true—*i.e.*, that to say that the kidney cannot be certainly fixed by operation is a libel on surgery. The author quotes a very large number of cases which should at least offer food for serious reflection on the part of all practising physicians. Though some of the apparent cures in neurasthenic cases may

be put down to the rest, necessary in the after-treatment, suggestion, &c., still, as Dr. Suckling points out, many of these cases had been treated by prolonged rest before, and though perhaps relieved for a time, the symptoms had recurred as soon as the patient returned to an ordinary mode of life. In Chapter XII. the author points out the very important fact that a movable kidney may be a cause of the most severe symptoms without ever being palpable. This he explains by a rotation of the kidney on a transverse axis, so that the lower pole is swung inwards and presses on the commencement of the ureter. At operation in these cases the kidney is found freely movable in a transverse direction, but only to a very slight extent vertically. He has seen six of these cases. Curious to say in five of these cases it was on the left side. He also emphasises the fact that the severity of the symptoms is not in proportion to the degree of mobility of the kidney, a case where the kidney may travel actually into the pelvis sometimes giving rise to slighter symptoms than another where the kidney is only palpated with difficulty a few inches below the costal margin.

We quite agree with Dr. Suckling when he says that a single examination can never negative the mobility of a kidney, and insists on the necessity of examining the patient in an upright position as well as the prone.

Symptoms and their Interpretation. By James Mackenzie, M.D., M.R.C.P. London: Shaw & Sons. 1909. 8vo. Pp. xx + 297.

This work is an exhaustive treatise on the symptoms of visceral diseases, one or more chapters being devoted to the symptomatology of affections of each system.

At the outset the author very rightly pleads for closer and more accurate observation of the symptoms, and for more logical deductions from them, than are frequently made by members of the profession. Medicine can never become an exact science so long as looseness of expression and reasoning is permitted amongst her students.

Symptoms are classified into *reflex*, *functional*, and *structural*; and the overwhelming importance of the first group is insisted

upon. *Reflex* symptoms are generally the earliest to manifest themselves, and are the usual cause of the patient's seeking advice.

A considerable space is devoted to the discussion of pain, particularly to the so-called visceral variety. Referred pain and the radiation of pain are considered on an anatomical and physiological basis, and such phenomena as pain in the shoulder resulting from biliary affections are clearly explained.

Chapters on the "Examination of the Patient" and on the "Estimation of the Value of Symptoms" are included.

The book is the outcome of a number of years of accurate observation and interpretation of the manifestations of disease, and shows plainly that Dr. Mackenzie "practices what he preaches." The text is large and clear, and is illustrated with several diagrams to show the areas of hyperalgesia resulting from disease of the various organs.

A Practical Treatise on Disease in Children. By EUSTACE SMITH, M.D., F.R.C.P.; Physician to the East London Children's Hospital. Third Edition. Edinburgh and London: Wm. Green & Sons. 1909.

SINCE the first appearance of this book in 1884 it has been one of the recognised standard books on the diseases of children, and has now almost attained the dignity of a classic. In form and style it has not altered a great deal, but it has, in the present edition, been brought well up-to-date, and much new matter has been introduced. At the same time a good deal of pathological matter has been omitted, and we think wisely, because as a rule clinical text-books, from want of space and from their method of arrangement, are not fitted for the adequate discussion of pathological detail. The change in this respect emphasises what has always been the essential character of this book—namely, its clinical and therapeutical standpoint. The writer speaks from the bed-side, and from the fulness of his experience is able to anticipate almost every difficulty that the general practitioner is likely to encounter. If anything, indeed, he errs on the side of over elaboration, but the more experienced the reader is the more he will appreciate the pains the writer has taken to make his work complete. The only

portions of the book which seem to us somewhat inadequate are those that deal with the more modern methods of examination, methods which have for the most part only come into use years after the first edition of this book. Thus, in dealing with the anæmias of childhood very little stress is laid on blood examination, and in the article on von Jakschs' anæmia no mention at all is made of the condition of the blood. Again, in the introductory chapter to the section dealing with nervous disease, the account of the reflexes and of many other physical phenomena is, to say the least of it, sketchy. Here and there also a little more information seems required. For example, Mongolian idiocy is dismissed in a paragraph, and in dealing with the treatment of tubercular peritonitis the only reference to operation is contained in the statement that "if we have reason to believe that there is a purulent collection in the peritoneal cavity, the expediency of laparotomy must be considered," followed by seven lines indicating that when caseous masses are abundant the operation is of little use. We do not consider operation the panacea that surgeons on the look out for a fee or for blood would have us believe, but we think that a physician may reasonably ask for more guidance as to when to advise and when not to advise operation than is here afforded.

These minor defects do not, however, in any way alter the high opinion that we have always held of this work, and we cordially recommend it to all those who desire to conscientiously study the symptomatology and treatment of their cases. The volume is well bound, clearly printed, and has a good index.

Medical and Surgical Report of the Presbyterian Hospital, New York. Vol. VIII. December, 1908. Edited by John S. Thacher and George Woolsey. New York: Polydore, Barnes & Co.

This interesting and useful Hospital Report contains twenty-four articles on a variety of clinical subjects. Dr. Carter contributes an important paper on artificial nutrition by the hypodermic method, in which he gives in detail the result of his experiments upon dogs. The main result of these experiments is to prove the present imperfection of the method, and

to point out the possible danger that may result from its employment. At the same time Carter has found that peptonised milk may at times be safely used, and it is to be hoped that further work on similar lines may confirm this, and point out more clearly the necessary conditions for safety. Another important paper by Russell Cecil deals with the pathology of the pancreas in diabetes, and is well illustrated by micro-photographs. From his observations the conclusion is drawn that disease of Langerhans' islands is met with in about 80 per cent. of all diabetics. Other interesting papers are those on phagocytic immunity by Dr. Meakins, primary carcinoma of the vermiform appendix by Mr. Williams, and two papers on Calmette's ophthalmo-reaction and on von Pirquet's reaction. These papers are, however, only the pick of a good lot, for every article in the Report is worth reading. The staff of the hospital are to be congratulated on the amount of good work that they are able to turn out in the year.

A Text-Book of the Diseases of the Ear. For Students and Practitioners. By PROFESSOR DR. ADAM POLITZER, of Vienna. Translated at the personal request of the author, and edited by MILTON J. BALLIN, M.D., and CLARENCE L. HELLER, M.D. Fifth Edition. Revised and Enlarged, with 337 Original Illustrations. Pp. xiv + 892. Royal 8vo. London: Baillière, Tindall & Cox. 1909.

WE greet the fifth edition of Politzer's text-book with satisfaction, as it embodies the ripe experience and skill of perhaps the best-known ear specialist in the world. His book is too well known to all those interested in ear surgery to require any detailed notice from us on this occasion. The present edition has been brought well up to date in all the most important advances (and they have been many) recently made in aural diagnosis and therapeutics.

The chapter on otosclerosis is a valuable contribution to the literature of a subject which has recently loomed large in the otological world.

Another subject where valuable pioneer work has been done in Professor Politzer's laboratory is concerning the functions

of the semicircular canals and the production of nystagmus by caloric or galvanic stimuli, or by rotation.

The translation is rendered into good English, with none of those disagreeable Americanisms and lapses of grammar which often disfigure trans-Atlantic medical writings.

What we have said on previous occasions, and now repeat, is that Professor Politzer's treatise will be found a most practical, complete, and satisfactory guide to the whole study of ophthalmology up to date.

A System of Medicine by Many Writers. Edited by Sir Clifford Allbutt, K.C.B., M.A., M.D., LL.D., D.Sc., F.R.C.P., F.R.S., F.L.S., F.S.A.; Regius Professor of Physic in the University of Cambridge, Fellow of Gonville and Caius College; and Humphry Davy Rolleston, M.A., M.D., F.R.C.P., Senior Physician, St. George's Hospital; Physician to the Victoria Hospital for Children; some time Fellow of St. John's College, Cambridge. Volume V. Diseases of the Respiratory System. Disorders of the Blood. Macmillan & Co., Limited, St. Martin's Street, London. 1909. 8vo. Pp. xiv + 969.

This, the fifth, volume of Allbutt's and Rolleston's "System of Medicine" contains as many pages as were "the days of Methuselah" in years—"nine hundred sixty and nine."

It is pointed out in the Preface that, while it deals with the same subjects, the volume differs very considerably from the corresponding volume in the original edition of "Allbutt's System of Medicine." The first article—on "Physical Signs of the Lungs and Heart," by Dr. Hector Mackenzie, of St. Thomas's Hospital—has been transferred from the fourth volume of the first edition. Similarly Dr. C. Theodore Williams's account of artificial aëro-therapeutics has been brought from the original first volume so as to be in closer relation to the diseases of the lungs, to which it almost exclusively refers.

The subject-matter proper of the volume opens with an article on "Asthma and Hay Fever," by Dr. James F. Goodhart and Dr. E. J. Spriggs. Mention is made, of course, of the Charcot-Leyden crystals, but Cohn's view that they

cannot be composed of spermine, as suggested by Schreiner, because they are hexagonal on section, and so do not belong to the octahedral system, is adopted by the authors, who do not advance any other theory as to their nature (page 50). In his article on "Leukæmia," further on in the volume (page 804), Professor Robert Muir, of Glasgow, states that these crystals certainly contain phosphorus, and are probably nucleo-protein derivatives. We are greatly struck by the common sense line taken by Dr. Goodhart and Dr. Spriggs in the section on the treatment of asthma. Beginning by adopting Edward Liveing's phrase "paroxysmal neurosis" as applicable to this disease they go on to say that "the treatment of asthma too often becomes a repeated sacrifice to the paroxysm. . . . But this plan of campaign is ultimately a most disastrous one" (page 63). They rightly state that "any source of peripheral irritation should be dealt with. The most important are *morbid conditions in the naso-pharynx* and *errors of diet*" (page 65).

Dr. William Ewart is responsible, as before, for the articles on bronchitis and bronchial dilatation. In the latter article the author draws a distinction between bronchiectasis, or dilatation of the bronchi, and bronchiolectasis, or dilatation of the bronchioles. The latter section is illustrated by three very striking pictures of the condition.

Although the articles on "lobular" and "lobar" pneumonia have been practically rewritten by Drs. A. P. Beddard and John W. H. Eyre, we are not quite satisfied with them—for two reasons. First, we consider that they are out of place: they should be amongst the sections dealing with the acute infections. With equal propriety, or rather impropriety, might enteric fever be placed among Diseases of the Digestive Organs. Secondly, quite too hard and fast a line is drawn between lobular and lobar pneumonia in the sectional headings. In the letterpress Dr. Beddard is careful to avoid any such rigid classification. He writes:—"The clinical course of a pneumonia depends upon the kind of micro-organism which is infecting the lungs, and not upon the distribution of the pathological changes which it produces there [*i.e.*, in them]. It follows that when the pneumococcus, apart from other bacteria, produces a pneumonia, the symptoms and course of

the disease will be the same, no matter whether the pneumonia be lobar or lobular in distribution. In adults pneumonococcal pneumonia is always lobar; in children it may be either lobar or lobular. . . . The younger a child is the more likely is the pneumonia to be lobular, and after about five years of age it will almost certainly be lobar. . . . The age of the child, however, is not a safe clinical guide to the distribution of the pneumonia, because even in the youngest infants the pneumonia may be entirely lobar."

We are in a position from our personal clinical experience to thoroughly endorse these views of Dr. Beddard.

Among the complications of lobar pneumonia " no mention is made of parotitis (parotid swelling or " bubo "), which is a rare and also a grave complication. Sudden swelling of one parotid gland, however, may be metastatic and eliminative, being quickly followed by marked improvement in the patient's constitutional state and by resolution in the affected lung.

The longest article in the volume is that on Pulmonary Tuberculosis, by Dr. Percy Kidd. Extensive additions have been made to it by Dr. William Bulloch, bacteriologist to the London Hospital, who has given a very full account of the present state of knowledge of the paths of infection in tuberculosis, of the pathology, bacteriology and specific treatment of the disease. Dr. Noel Bardswell, Medical Superintendent of the King Edward VII. Sanatorium, briefly and ably discusses the sanatorium, or open-air treatment, the essentials of which are :—" (1) Abundance of fresh air, day and night; (2) a somewhat generous diet; (3) rest; and (4) regulated exercise."

The state of the urogenital system in tuberculosis is described at pages 374 and 375, but Dr. Hale White's curious observation of a persistent acidity of the urine in phthisis is not mentioned.

Dr. J. J. Perkins, Physician to the Brompton Hospital for Consumption, contributes new articles on Abscess and Gangrene of the Lung.

" New Growths of the Lung " (pages 498 to 515, inclusive) and " New Growths of the Pleura " (pages 586 to 591) are the joint work of Dr. Frederick T. Roberts and Dr. Perkins.

Dr. Samuel Gee's classic article on " Pleurisy " has been revised by Dr. Thomas J. Horder, Physician to the Great

Northern Central Hospital and Medical Registrar at St. Bartholomew's. The interesting subject of Pneumoconiosis (may we suggest as a more correct form "Pneumonoconiosis"?) has been well handled by Sir Thomas Oliver, of Newcastle-on-Tyne, whose experience when he was formerly medical expert to the Dangerous Trades Committee at the Home Office has stood him in good stead when writing his masterly account of "dust diseases."

"Emphysema of the Lungs," by Dr. J. Kingston Fowler, and "Pneumothorax," by Professor David W. Finlay, of Aberdeen, are also noteworthy contributions to this volume.

In the Editors' words in their Preface, "the remainder of the Volume contains what may perhaps most conveniently be described as 'The Disorders of the Blood.' Among these articles, that on Pernicious Anæmia, by Dr. French; that on Splenic Anæmias by Dr. Hutchison and Dr. Ledingham, and that on Hæmophilia by Sir Almroth Wright, have been entirely rewritten. Completely fresh articles on Polycythæmia and Erythræmia, and on Cyanosis have been contributed by Dr. Parkes Weber and by Dr. Garrod."

We are glad to observe that the Editors express in graceful terms their indebtedness to Dr. John Tatham, who has lately retired under the age limit from the post of Medical Superintendent of Statistics in the Registrar-General's Office, Somerset House, "for generous help in connection with statistical questions."

The Volume is illustrated by four coloured plates, a large number of figures, and several charts. Taken as a whole, it is worthy of the reputation of the "System of Medicine by Many Writers."

Saint Thomas's Hospital Reports. New Series. Edited by DR. H. G. TURNEY and MR. W. H. BATTLE. Vol. XXXVI. London: J. & A. Churchill. 1909.

AT the suggestion of the editors considerable alterations have been made in the Medical Report for 1907, and to our regret we find that detailed reports of special cases are no longer included. Cases of interest form an appendix to the report. These changes are necessitated by want of space; we should

have preferred some twenty or more extra pages, even at an advanced cost, rather than the omission of the deeply-interesting and highly-instructive matter formerly included in the reports of special cases. Happily short abstracts of the more important and interesting cases of the surgical report are recorded. These include :—Five cases of partial resection of stomach, two cases of acute appendicitis with complications, two cases of carcinomatous stricture of the large intestine, a case of round cyst, and a case of osteo-malacia complicated by a pyonephrosis. A list all too short considering the wealth of material at the disposal of the Editors. Withal, as we read the abstracts, we all the more regret the decision of the editorial staff that deprived us of the medical abstracts to which we looked forward year after year for guidance and help. Notwithstanding the omission referred to above, we cannot but acknowledge that the Editors, by the classification and arrangement of the matter and mass of material at their disposal, have given the medical profession a report of sterling and permanent value—a most helpful work for the student of medicine, rich in information on every province of medicine.

Nisbet's Medical Directory, 1909. In Two Parts. Part I.—Directory of Medical Practitioners. Part II.—The Local Directory.

THE aim of the publishers of this Directory is to furnish a handy, accurate, and inexpensive list of medical men, conveniently and concisely arranged in alphabetical order. And we congratulate them on their success.

The Surgery of the Ear. By SAMUEL J. KOPETZKY, M.D. Illustrated with sixty-three half-tone and line drawings, eight charts and four coloured plates. London : Rebman, Ltd. 1908. 8vo. Pp. xvii + 368.

THIS handsome volume is the last of a series of important text-books on diseases of the ear. The volume deals mostly with the surgical operations, &c., called for in different conditions of the ear, rather than with the whole therapeutics of the organs of hearing and equilibration.

"The present tendency toward specialism, if it continues," the author says in his preface, "may result in a group of men who will devote themselves exclusively to the treatment of the surgical diseases of the ear." This tendency and the recent advances in otological surgery, he considers, have created a need for a book which shall embody all the additions to our knowledge of the surgery of the ear. With this aim in view the writer has attempted to correlate the extensive literature with personal experience and observations, and has produced a volume which he considers is adapted to the needs of the medical student, the practitioner, and the specialist.

The book is well printed, well written, and well illustrated, and should prove of very great use to those for whom it is intended. It is quite up-to-date, and the procedures are clearly explained.

The Quarterly Bulletin of the North-Western University Medical School.

THE current number of this magazine is rich in valuable and practical articles. Dr. W. E. Schroeder's paper on fracture of the acetabulum, of which fracture he collected the reports of forty-eight cases, together with an account of two which came under his own notice, is a contribution of permanent value; and to make the paper more helpful still he has given an account of experiments made on the cadaver to throw light on the character of the violence that occasions this terrible injury. He quotes the classic cases of Sir A. Cooper, Baron Dupuytren, and Mr. Bennett, the last of which appeared in Vol. CX. of this journal. Dr. Richtes writes on the indications for operation on the thyroid gland. He enters very fully on the consideration of the use of serum and milk preparations of thyroidectomised animals to develop a specific antitoxic substance, and is driven to the conclusion that in thyroid cases we cannot rely upon a neutralising serum to effect a permanent cure. He gives his grounds for advising surgical interference in certain classes of the disease, and although they may not all be conclusive they are all well worth reading and pondering.

The Cammidge reaction in the urine, which promises to be so useful as a diagnostic help in diseases of the pancreas, is

dealt with by Dr. Buhlig. Our readers, who have read the original papers in the *Lancet*, will no doubt read this appreciation of the test and an account of the good results our American friends obtained from it with pleasure and benefit.

Space will not allow of our doing more than to call attention to Dr. Wall's paper on food disorders in infancy. The paper is well and freely illustrated, and his record of what may be obtained, in the most unpromising cases, by a well selected dietary is most encouraging; but surely good results are the outcome of patient unceasing care and watchfulness, such as the author of the paper gave, quite as much as anything else.

The Unknown Life and Works of Dr. Francis Joseph Gall. By Bernard Hollander, M.D. London, W.: Siegle, Hill & Co. 1909.

The non-medical reader who may read this pamphlet cannot but think that anatomists were a very unobservant body of scientists not to notice or describe the conformation of the human brain until Francis Joseph Gall's days. And he will, probably, think worse of the modern anatomists for neglecting the teaching of such an inspired writer as Gall. But in truth much has been done; we need but mention the names of Sylvius and Willis, and we may add O'Halloran. The last especially strove to solve the question of cerebral localisation, Long prior to these writers, as far back as the Neolithic age, men were conscious of the fact that the cerebrum had important functions to perform in the regulation of human conduct. The idea put forward in the pamphlet, that until Gall expounded his views man drew no deduction of character from the conformation of the skull, is too absurd to call for confutation. Gall drew certain deductions from both the form and size of the skull and the features. He concluded that prominent eyes were indicative of a love of music and a generous disposition, and that a prominent zygomatic and a small skull and low beetling brows were not usual in philanthropists. All this, however, has nothing to do with Gall's claim to be considered as the discoverer of certain cerebral centres of special functions. They rather favour the theory of phrenology—which theory Dr. Hollander tells us Gall

repudiated; but all the same he travelled Europe in the companionship of his pupil, Spurzheim, the apostle of phrenology, and neither by writing nor by public pronouncement did he disassociate himself from the views of his pupil and intimate friend. Space does not allow of an examination of the claims put forward by Dr. Hollander for Gall's right of place to Valhallo.

He never once in his voluminous writings gives any scientific grounds for his theory of cerebral localisation. How different the works of Ferrier, Horsley and Gerald Yeo! His theory that "the brain moulds the skull and grows in accordance with it, and that the outline of the skull for all practical purposes is an index of the shape of the brain," is only half a truth. Majendie long ago drew attention to the fact that the cranial bones, when the brain ceases to grow, separate their outer from their inner plates to accommodate the outer to the growth of the facial bones.

The conformation of the skull is largely due to the growth of the maxillæ. In keeping in touch with the growth of the superior maxillary bones the anterior plate of the frontal bone is carried forward, as is the molar. The inner plate grows with the same rapidity as does the brain, and closely encircles it. If the brain is small and the maxilla large we get a sloping forehead and massive maxillary muscles, producing a wide skull; the animal properties in excess. This need not be, however; the whole skull may be properly proportioned though preternaturally small, as in the case of Shelly. We may say, further, that the cessation of growth is in brain workers—good or evil—marked by an increase in the number and tortuosity of the smaller gyrations. The author quotes the case of Dr. Ellitson as an illustration of how Gall's followers were persecuted. Dr. Ellitson's troubles were in no way connected with phrenology, as may be seen by consulting the journals of the time.

The Sanitary Officers' Handbook of Practical Hygiene. By C. F. WANHILL and W. W. O. BEVERIDGE, D.S.O. London: Edward Arnold. 1909. Pp. 151.

THIS handbook is meant to be used by those who have had

previous training in modern health work, to refresh their memories with regard to details. Processes and apparatus are, as far as possible, simple, so that the handbook may be helpful to those working in small laboratories in out-of-the-way places. The descriptions are clear and easy to follow, and there is a good index. Interleaving admits of jotting down notes.

The Re-Education of Self-Control in the Treatment of the Morphia Habit. By Oscar Jennings, M.D. (Paris). London: Baillière, Tindall & Cox. 1909. Cr. 8vo. Pp. 32.

This is an introduction to the author's volume on "The Morphia Habit and its Voluntary Renunciation." His experience, of twenty years, in dealing with victims of the morphin habit, confirms him in the opinion that "drugs should be used as little as possible," and that, without the restoration of will, sympathetic help from and confidence in the medical attendant, little permanent good can be expected. This, we believe, is the true line of treatment for the drug habit, and it is the enlargement of this idea that is dealt with in the present pamphlet.

Aseptic Surgery. By Charles Barrett Lockwood, F.R.C.S.; Surgeon to St. Bartholomew's Hospital. Third Edition. Oxford Medical Publications. London: Henry Frowde; Hodder & Stoughton. 1909. Cr. 8vo. Pp. xii + 275.

Mr. Lockwood in this work tabulates many facts chiefly proving the difficulty of killing bacteria and their spores by means of heat and chemicals. Aseptic surgery is given an unusual meaning, covering all measures to exclude contamination—for instance, the irrigation of wounds with 1 in 1,000 biniodide solution.

The volume is especially meant for dressers and nurses, but reading it will be of benefit even to the cleanest of surgeons. The fact that more space has not been devoted to the action of chemicals is to be regretted. Alcohol is barely dealt with; lysol, creolin and boric lotion not at all. A chapter on how to keep clean an operating theatre would be of advantage.

The difficulty of keeping clean irrigators, tables, and waste pipes is well known to all nurses.

The method of sterilising cat-gut by boiling in paraffin (Bartlett's) is well worthy of inclusion.

The volume would gain in interest by the omission of many of the authorities quoted, whose names convey nothing to the reader, while room would thus be provided for the above-mentioned subjects.

The print is clear, the index complete, and the subject-matter very good.

Aids to Surgery. By JOSEPH CUMMING, M.B., B.S., F.R.C.S. Eng. Second Edition. London: Baillière, Tindall & Cox. 1908. F'cap. 8vo. Pp. vi + 404.

A CONDENSED edition of Rose and Carless. Very misleading for the student who does not know his practical work, but excellent when cramming for examinations. The new edition is a distinct improvement on the old, especially in respect to the chapters on abdominal surgery.

Essentials of Surgery. By ALWYNE T. COMPTON, F.R.C.S. London: Henry Kimpton. 1908. Cr. 8vo. Pp. ix + 428.

THIS small volume suffers from the disadvantages of concentration. It should be excluded from the library of all junior students, but has its use, once some experience has been acquired, in bringing the chief points of surgical cases prominently before the reader.

The print is good, the classifications are clear, and the diagrams to the point. We can confidently recommend it for examination purposes.

Home Bottled Fruits and How to do Them. By G. W. S. BREWER, F.G.S. Cheltenham: Harvey & Nealing. 1909. Pp. 40.

NOWADAYS, when the benefits of pasteurising milk are kept so constantly before the public, it is interesting to hear of the same scientific principle being applied to another department

of domestic work. In his little treatise on "Home Bottled Fruits and How to do Them," Mr. Brewer describes the method by which fruit can economically be preserved during the season when it is plentiful and kept for winter use. The principle is practically the same as that in pasteurisation—namely, exposure to a temperature of 160° F. for from ten to fifteen minutes (a slightly shorter time than is required by milk) with subsequent cooling in an air-tight vessel. Mr. Brewer's scientific explanations are a little loose, but he is not writing for scientists, and his descriptions of the technique are admirably clear. As a financial saving of quite 50 per cent. is effected by this method, the advantage from a medical standpoint would be the hope of wholesome fruit being more frequently present on the tables (particularly the breakfast tables) of the public, with the consequent beneficial effect.

Medical, Fellowship, D.P.H., and Dental Examination Papers: For the Degrees of the University of Edinburgh; and the Diplomas of the Royal College of Surgeons, Royal College of Physicians, Edinburgh; and Faculty of Physicians and Surgeons, Glasgow. Edinburgh: E. & S. Livingstone. 1909. Pp. 288.

In this volume the publishers have collected all the papers that have been set at the various examinations of these several bodies, from the year 1903 up to March, 1909, inclusive. The papers in each subject are all grouped together, so that one can see at a glance what standard of answering is expected at each examination. It should prove a very useful little work to all intending candidates and to teachers.

A Theory regarding the Origin of Cancer. By C. E. Green. Second Edition. Edinburgh and London: William Green & Son. 1909. Pp. 46.

Whatever be the truth regarding the origin of cancer, the few pages in this little book will be found interesting and instructive. The author has made an honest attempt to find a common factor in the many circumstances which are believed to favour the occurrence of cancer. Clay pipes, soot, kangri

baskets, "cancer houses," and the materials in such trades as show a high cancer mortality are all examined. The author finds sulphuric acid and oxides of sulphur to be a common factor. The tumours in the Cruciferæ are found to be fostered by manures dissolved in sulphuric acid. The active agent in causing malignant cell proliferation is looked on as being some low form of fungi which develops best aided by these powerful deoxidisers.

There are many difficulties to accepting a parasitic theory of cancer, but there are many suggestions in this small book which are worthy of investigation. It can be read through in a few minutes, and is pleasantly written.

Transactions of the American Pediatric Society. Edited by LINNAEUS EDFORD LA FÉTRA, M.D. Volume XX. New York: E. B. Treat & Co. 1909.

THE collection of papers—twenty-eight in all—included in this volume show that the Society is doing a large amount of very valuable work.

There are several papers on the serum treatment of epidemic cerebro-spinal meningitis. The writers are, without exception, convinced of its value, one believing its value "to be comparable to that of diphtheria antitoxin in diphtheria."

A report upon one thousand tuberculin tests in young children, with a full account of the discussion that followed, and two papers on an epidemic of acute anterior poliomyelitis are especially deserving of mention.

We congratulate the members of the Society on the excellent work they are doing, and the Editor on the admirable manner in which he has discharged his onerous duties.

The Practical Medicine Series. Volume II. General Surgery. Edited by JOHN B. MURPHY, M.D., LL.D. Chicago: The Year-Book Publishers. 1909.

INCREASINGLY hard as it is to read the articles which appear in the numerous medical journals at home and abroad, a volume such as this is very welcome. In it may be found an

abstract of the chief papers of the year, dealing with every branch of general surgery. It contains also a *résumé* of the discussion at the International Surgical Congress on Anæsthesia, and "the reckless manner" in which general anæsthetics are given is severely criticised and legislative enactments are appealed for.

The volume is useful in showing the progress of surgery during the year, and special mention is made of the epoch-making work of Trendelenberg in regard to the operative treatment of pulmonary embolism. More attention is being given to the long neglected bone and joint lesions; and the open, visual and timely surgery of the bladder and kidney is yielding gratifying results.

The volume has numerous illustrations, is well indexed, and will, as its predecessors did, help the practitioner to keep *au courant* with the latest advances made in surgery.

High Frequency Currents. Their Production, Physical Properties, Physiological Effects and Therapeutical Uses. By H. Evelyn Crook, M.D., B.S. Lond., F.R.C.S. Eng., of the Middle Temple, Barrister-at-Law; Member of the Röntgen Society, &c.: formerly Assistant in the Electro-Therapeutical Department, West London Hospital, &c. Second Edition. London: Baillière, Tindall & Cox. 1909. Demy 8vo. Pp. xii + 232.

This volume is divided into three parts. The first deals with the production and physical properties of high-frequency currents. It is clearly written, and explains in a simple manner the apparatus employed and the nature of the currents obtained. The present edition has been brought up-to-date by descriptions of the newer forms of interrupters, &c.

Part II. deals with the physiological effects of high frequency currents, while Part III. is devoted to their therapeutical uses. Among the more recent usages we find mention of the treatment of nævi by the effluve and spark, and fulguration of neoplasms, as well as high frequency methods of dealing with obstinate skin troubles.

The book is well illustrated, and has been carefully revised. In giving a simple but thorough account of high frequency

practice Dr. Crook's book compares very favourably with other treatises on the same subject.

Reports of the Society for the Study of Disease in Children. Volume VIII. Edited by GEORGE CARPENTER, M.D. London: J. & A. Churchill. Pp. 504. Session for 1907–1908.

THE Publication Committee of the Society, and especially the editor, are to be warmly congratulated on the result of their labours.

The volume before us contains the record of a very large number of interesting—some very rare—clinical cases, and many of the papers are beautifully illustrated.

We noted, more particularly, a series of articles on inherited syphilis, with illustrative cases, and an account of a case of congenital hypertrophic stenosis of the pylorus that responded to medical treatment.

The discussions that followed the papers have been included in the book and add much to its value. They have been admirably reported and evidently edited with great care.

A complete and accurate index will be found at the end.

The British Health Review. Vol. I. No. 4. 15th July, 1909. London, 21 Paternoster Square, E.C. Pp. 46.

THE *British Health Review* for July, 1909, is a public health number. The chief article is by Mrs. Sidney Webb, D.Litt., on "The Poor Law and Public Health." In it the authoress points out the salient features of both the Majority and Minority Reports of the recent Poor Law Commission. Margaret McMillan deals with what she calls the "burning educational question" of the day—viz., Medical Treatment—whilst Mrs. Hodgkinson has a trenchant article on the "Causes of the Decline of the Birth-rate." "M.D." tells of the troubles, and how to avoid them, of the man of sixty who has lived, not wisely, but too well. Up to the age of 50–55, he says, "clinkers" accumulate in the body, but then the fires of combustion begin to slacken owing to blocks in the machinery. How to live both wisely and well and so be young at a

hundred is outlined, and he declares the time is at hand when "people will be ashamed to die younger."

The Hon. Rollo Russell on "Cancer and Diet," Dr. Stenson Hooker, on "The delaying of Old Age," the Cookery hints and recipes of Mrs. Earle, and the Editor's practical replies to ailing correspondents, form the bulk of a most useful and readable number.

The Principles and Practice of Medicine. Designed for the use of Practitioners and Students of Medicine. By William Osler, M.D., F.R.S., Fellow of the Royal College of Physicians. London; Regius Professor of Medicine, Oxford University. Seventh Edition, thoroughly revised. London: Appleton & Co. 1909. 8vo. Pp. xvii + 1143.

"Copyright, 1892, 1895, 1898, 1901, 1902, 1903, 1904, 1905, 1909, by D. Appleton & Company"—a statement such as this on the reverse of the title page is sufficient evidence that Professor Osler's "Practice of Medicine" has passed beyond the reach of criticism.

The reviewer's duty in respect to this, the seventh edition, is to point out the new features in the work rendered necessary by the rapid progress of medical science of late years.

In this edition the author has incorporated "the long-expected epoch-making discoveries in syphilis, the work of the New York Pneumonia Commission, the triumph of the British Army and Navy surgeons in stamping out Malta fever, the splendid work of Gorgas and his colleagues at Panama, the studies of Strong and his associates in the Philippine Islands, the fresh work which has been done in trypanosomiasis, psorosomiasis, tropical splenomegaly, the experiences of the last epidemic of cerebro-spinal fever in New York, Belfast, and Glasgow, with the hopeful work of Flexner at the Rockefeller Institute, the all-important contributions on 'carriers' in the acute infections, the results of the Washington Congress, with the new views on infection, heredity, diagnosis, and treatment of tuberculosis, the remarkable studies upon epidemic

anterior poliomyelitis, and the work upon Rocky Mountain fever, milk sickness, and the serum disease."

This summary from the preface testifies to the thoroughness and success with which Professor Osler has kept pace with the extraordinary rapidity of the progress of our knowledge of the acute infections.

The author's "last word" to the General Practitioner on the subject of tuberculosis is printed in italics, and may well be quoted: —"The battle against this scourge is in your hands. Much has been done, much remains to do. By early diagnosis and prompt, systematic treatment of individual cases, by striving in every possible way to improve the social condition of the poor, by joining actively in the work of the local and national anti-tuberculosis societies, you can help in the most important and the most hopeful campaign ever undertaken by the profession." (Page 359.)

Judged by the standard set up in this fine passage we fear that the "Tuberculosis (Ireland) Act, 1908," will be found sadly wanting and ineffective. That ill-starred measure, leaving all to the chance adoption of its compulsory notification sections by the Urban and Rural Sanitary Authorities, subject to the sanction of the several County Councils of Ireland, excludes early cases of pulmonary tuberculosis from notification, and fails to provide hospital accommodation for the advanced cases which come within the purview of the Local Government Board's "Order" under the first part of the Act.

A careful revision of the first section—that on Parasites—will be noticed, with many additions. Much new matter has been introduced into the sections on the Diseases of Special Organs, and in the section on Diseases of the Nervous System, the studies of Marie and his pupils upon aphasia are described, while the new work on spastic paraplegia, Oppenheim's disease (Amyotonia congenita), posterior basic meningitis, and psychasthenia has been incorporated.

New points in treatment are discussed, particularly in reference to serum-therapy and the surgical treatment of internal disease. At page 1095 there is a characteristic

passage on "Faith Healing," for the success of which the author says three elements are necessary: first. a strong personality in whom the individual has faith, *e.g.*, "what has served the turn of common humanity very well, a physician;" secondly, certain accessories, *e.g.*, "for us, a hospital or its equivalent, with a skilful nurse;" thirdly, suggestion.

With pardonable pride Dr. Osler further tells us in his preface that since the appearance of the last edition the work has appeared in French and German, while Spanish and Chinese translations are in course of preparation. This is a record of which any author has just reason to be proud.

A TREATMENT FOR FURUNCLES.

MANY and various have been the treatments advocated for that troublesome condition of furuncles, the most modern being the compression cups of Bier. The following is the method advocated by Dr. G. Th. Jackson, Professor of Dermatology of the College of Physicians and Surgeons of New York. As soon as the furuncle begins to point he pierces the summit with a pointed stick of wood dipped in 95 per cent. of carbolic acid. He does not use any pressure in the usual way to extrude the pus, but washes the surface around with hydrogen peroxide or with a 1 per cent. sublimate solution, and then applies gauze smeared with an ointment containing 5 to 10 per cent. salicylic acid. This is usually sufficient to effect a cure, but occasionally, if the furuncle is very large, the operation must be repeated the following day. The ointment must be kept applied for about a week. If fresh furuncles appear in the surrounding skin, due to infection before the application of the treatment, these must be treated in the same manner. If the furuncle fails to point, one or two drops of a 5 to 10 per cent. solution of carbolic acid should be injected and the ointment applied as already described. The author states that he has used this method for many years with complete success, and was taught this manner of treatment by Dr. G. H. Fox, previous professor of dermatology of the same college.—*The Hospital*, July 3, 1909.

PART III.

MEDICAL MISCELLANY.

Reports, Transactions, and Scientific Intelligence.

ROYAL ACADEMY OF MEDICINE IN IRELAND.

President—J. Magee Finny, M.D., F.R.C.P.I.
General Secretary—James Craig, M.D., F.R.C.P.I.

SECTION OF PATHOLOGY.

President—A. R. Parsons, M.D., F.R.C.P.I.
Sectional Secretary—Professor White, R.C.S.

Friday, April 16, 1909.

The President in the Chair.

Cysts in Liver and Spleen.

Dr. Peacocke read a paper on cysts in the liver and spleen, and gave some clinical particulars of the case from which the specimens exhibited were taken.

Professor Scott described the specimens. The liver was somewhat smaller than was usual, but the noticeable thing about it was the presence of half a dozen cysts spread around the margin, varying from one to two inches across. Each cyst was single. There was a single, somewhat small, cyst in the spleen. Sections under the microscopes showed numbers of flat cells. He believed they were not bile-cysts, but some form of the lymphatic type.

Spleno-Medullary Leukæmia.

Dr. Rowlette exhibited specimens of organs from a case of spleno-medullary leukæmia. The patient was a woman, aged fifty-eight. For many years she had been in good health, but had been treated once for some condition of the heart. She was admitted to hospital in October last complaining of swelling of the feet. There was noticeable a very considerable swelling of the abdomen, and the whole of the left side was filled by a large

tumour with a well-defined edge, reaching down to the left iliac region. Its greatest diameter was sixteen inches. The blood was examined on October 18, a fortnight after admission, and showed the red corpuscles to be 3,600,000, white cells numbered 640,000, and were of the usual type, except that one saw a larger number of "mast cells" than usual. The hæmoglobin was about 70 per cent. The condition of the blood left no doubt as to the diagnosis. The patient was treated with X-rays, and showed some improvement. In February an examination of the blood showed hæmoglobin about 80 per cent. The red corpuscles were considerably above the normal, and the white had fallen. The condition of the patient's heart was bad all the time, and she died in the beginning of March. The liver was very enlarged, and the heart had mitral disease, which was responsible in most part for the extreme passive congestion of the liver. The spleen was enormously congested. It was an interesting feature of the case that the red cells increased in number towards the end of life.

The President inquired as to the number of X-ray sittings, and as to whether there was any diminution of the size of the spleen, or any change which might be attributed to the X-rays.

The Secretary said he had never seen a case of leukæmia with so little infiltration of the organs. On more than one occasion he had the opportunity of testing the phagocytic power of the blood, and, while the influence of the serum in this regard appeared to be normal, he was forced to conclude that the phagocytic power of the polymorphonuclear leucocytes was considerably less than normal, and steadily lessened as the disease progressed.

Dr. Rowlette, in reply, said the patient was exposed to the X-rays about every second day, as a routine measure, from shortly after admission to hospital until shortly before her death. There was considerable diminution in the size of the spleen, but she was troubled with severe bleeding of the bowels, and the rays were suspended on a couple of occasions. He did not know that he could put down any definite condition to the rays. It was possible that the thickness of the capsule of the spleen might be attributable to them, but he would not say so positively.

Pathological Report of the Rotunda Hospital for 1908.

This Report for the year 1908 was read, and the meeting adjourned. [The Report will appear in our October number.]

SECTION OF ANATOMY AND PHYSIOLOGY.

President—T. H. Milroy, M.D.
Sectional Secretary—E. P. M'Loughlin, M.B.

Friday, April 23, 1909.

The President in the Chair.

The Mechanism of Deglutition.

Professor W. H. Thompson made a communication on the above. He said the usual conception of the act of swallowing was that it consisted of three stages—mouth, pharynx, and œsophagus. But when one reflected it was obvious that the act was a reflex one, and, as such, would be discharged from certain places and by certain stimuli. It had been proved by experiment that the starting of the swallowing reflex was sufficient to carry the movement right down to the lower end of the œsophagus, even though a segment of the œsophagus were cut out, provided the nerves were retained intact. It is true, different conclusions on this point had been reached, but the divergencies were explained by differences in the conditions of the experiments, such as depth of anæsthesia, &c. The same law had been shown to hold good in the human subject in a case of cervical œsophagotomy, for when food was put in the lower segment of the œsophagus it remained there until an act of swallowing was started from above, which travelled over the point of severance and carried the bolus down. The areas from which the reflex could be discharged had also been investigated both in the lower animals and in man. The only thing necessary for the discharge was the contact of a properly prepared bolus with a definite spot of mucous membrane. After that the act was automatic. On further reflection it seemed rather unnatural to include in the act of swallowing anything prior to the discharge of the reflex from the mechanical contact of the bolus with the defined area of mucous membrane. The act of swallowing would thus consist of two stages—(1) the stage immediately following the contact of the mucous membrane and the bolus, by which the latter was projected into the œsophagus; and (2) the passage through the œsophagus. Anything prior to these stages belonged to the *preparation* for swallowing, not strictly to the act itself. As regards the preparation, it was to be remembered that the pharynx, for the greater part of its time, was engaged in taking

in air; it was only an occasional duty to perform the act of swallowing and to safeguard the air passages from concomitant danger. The closure of the nose offered no difficulty; that of the larynx had also been satisfactorily explained; but the chief point of dispute concerned the part played by the epiglottis. It had been shown long ago that the epiglottis moves down in the act of swallowing, but the investigations of Anderson Stuart some sixteen to eighteen years ago pointed to a different conclusion. They were opposed at the time by Kanthack and Anderson, but the point remained unsettled. Recently a Dutch investigator, Eykman, had studied the movements of the epiglottis by Röntgen rays, and had shown that it did descend in swallowing, the free margin sweeping down behind the bolus and carrying on any fragments left behind. With regard to the propelling force, it had been stated by Kronecker and Metzer that the contraction of the mylohyoid muscles gave a starting thrust which was sufficient to shoot the bolus through the whole œsophagus.

Professor Thompson showed the tracings on which the conclusions had been based, and considered that they had been misinterpreted. It appeared to him that the proper explanation was that, on the moment of the discharge of the swallowing reflex, there was started not merely a wave of contraction, but also a preceding phase of inhibition, to allow the easy passage of the bolus, and that this extended down into the œsophagus for fully half its length. Such a condition of relaxation remained continuous in a series of acts of swallowing, as in the long œsophagus of a horse, till the last act was discharged, when the larynx fell back and a wave of peristaltic contraction followed. A liquid bolus had not been traced farther than the region of the arch of the aorta in the human subject. It was by no means shot down with the extreme rapidity originally supposed by Kronecker and Metzer. With semi-solid and solid boluses, the mechanism was one of peristalsis practically the whole way through. It seemed that the bolus often rested for a considerable period in the lower fourth of the œsophagus, requiring the arrival of two or three weak peristaltic waves before an opening of the cardiac orifice of the stomach took place.

Professor Symington said it was difficult to realise that the tongue could move so extensively as to move the epiglottis in the manner described. In many animals the epiglottis normally extended upwards behind the soft palate. Certain animals had

the upper opening of the larynx permanently fixed in the naso-pharynx, and the food must pass on one or other side of it. In man there was no period in life in which they knew the epiglottis to project upwards into the naso-pharynx.

Professor Dixon said it was not uncommon to find a space in the lower part of the œsophagus containing food and liquor.

Dr. Johnston, Professor McWeeney, and the President also spoke, and Professor Thompson replied.

Critical Solution Point of Urine.

Mr. W. R. Gelston Atkins gave a communication on this subject.

Professor Thompson thought the method would work out of great value if it was reliable, as it was much more convenient than freezing.

The President said he wondered if the mean arrived at would not vary very considerably under experimental conditions. The great advantage of freezing was that it prevented alteration in the composition of the urine, while the molecular concentration of urine altered during the process of warming.

Professor McWeeney said the method gave an extended scale and power to judge of very much smaller differences in molecular concentration, but until it had been tried under various conditions he did not think they could say much about it, as it depended on a number of factors which did not appear to have been fully investigated.

Exhibits.

The President showed microscopic slides showing neuro-fibrillæ prepared by Cajal's silver method.

Professor Dixon exhibited a drawing apparatus.

SECTION OF SURGERY.

President—John Lentaigne, P.R.C.S.I.

Sectional Secretary—A. J. Blayney, F.R.C.S.I.

Friday, May 7, 1909.

The President in the Chair.

Bier's Method of Treatment by Hyperæmia.

Mr. R. Atkinson Stoney read a paper on the above subject. After mentioning the various forms of hyperæmia, he said he

would confine his remarks to passive hyperæmia, produced by means of the elastic bandage and suction glasses, more especially in the treatment of septic inflammation, rather than in tubercular disease, as in the treatment of the latter type of cases his experience had been neither extensive nor promising. He described the method of applying the elastic bandage and the suction glasses, laying special stress on the necessity of not producing too great a degree of hyperæmia, as in that case serious harm might be done. He gave the following rules for the application of the bandage :— (1) Place it on the limb as far from the site of the disease as convenient. (2) Wind it round a broad surface of the limb, to prevent local pressure and pain. (3) Do not bandage with sufficient force to weaken the pulse distally. (4) No pain should be caused in the diseased part, rather any existing pain should disappear. (5) The distal part should be bright or dark red, not blue, and should be warmer than the corresponding part on the opposite limb, not colder. (6) The bandage, for all except tubercular cases, should be left in position for two periods of eight to eleven hours or one period of sixteen to twenty-two hours out of the twenty-four. In the case of the suction glasses, ordinary aseptic precautions should be observed. A glass of sufficient size should be chosen to leave a margin of one inch or more around the inflamed part or opening, to prevent strangulation or compression of the lips of the opening. Pain should not be produced. And, especially where the cup was placed over a superficial bone or firm membrane, excessive pressure should not be used, for fear of sloughing of the parts. Some cases were briefly described illustrating the use of both these forms of application of passive hyperæmia in various conditions.

The President said he had been deterred from the use of the method by the unsatisfactory results got in the hands of some surgeons, but Mr. Stoney had helped to explain some of those results. He had recently been converted to its use for boils, but he had seen a great number of cases of tubercular disease which had deteriorated by the treatment, and in some cases he could not satisfy himself that the dissemination of the tuberculosis had not been in some way due to it.

Mr. L. G. Gunn said he had tried the treatment in cases of gonorrhœal knee and wrist trouble, but found it impossible to produce any degree of congestion without pain. He was therefore not surprised at getting no good results. He thought

French and English people, and more particularly Irish people, probably felt pain more acutely than the Germans, which might explain the differences in results.

Mr. W. I. de C. Wheeler confessed the same experience as Mr. Gunn, but in cases such as gonorrhœal rheumatism he did find some easing of pain, and apparently some improvement.

Dr. Ella Webb inquired as to the effect of the use of appliances advertised for putting on to the cervix of the uterus, and those used to produce a passive congestion of the lungs.

Mr. Pearson said that the use of the band would seem to lead naturally to the increase of pain, as it was chiefly a matter of tension, but the suction apparatus, by reducing atmospheric pressure, might produce an initial diminution of pain.

Mr. Stoney, in reply, said the worst results had been got by Bier in the knee-joint, for some reason which he could not explain. He did not suggest the treatment in any case where better results, or quicker equal results, could be obtained by operative means. It was in tubercular cases that the greatest difficulty was found in producing the correct degree of hyperæmia. He had no personal experience of the instruments mentioned by Dr. Webb. The question of tension was difficult to deal with. It was, however, easy to understand that pain, which was partly due to irritation of the nerve terminals by toxins produced by organisms, might be relieved by the congestion causing a flow of blood and lymph and producing a dilution of the toxins.

Post-Operative Tetanus.

Mr. Gunn read a paper on the above subject. [It will be found at page 1 of the present Volume.]

The President said the paper was one of the most valuable which had been read before the Academy. He could imagine no more appalling catastrophe to happen a surgeon than to have a case, or series of cases, of post-operative tetanus. He could not help keeping to the belief that the catgut must have been responsible. It was curious that in every case in which the catastrophe had occurred catgut had been used. It would be important to know what methods of sterilisation had been employed. He had himself been using the iodine catgut for some time, but if he was threatened by the terrible phantom of possible tetanus he would be inclined to give up catgut altogether.

Dr. Katherine Maguire said she had been in attendance on

one of the cases mentioned by Mr. Gunn. It was not a case of hysterectomy alone, but was combined with ovarian tumour, and quantities of thick catgut had been used. She thought the case was probably hopeless from the first. She knew that the patient could not have contracted the sheep disease mentioned by Dr. Richardson in his paper, as the patient had come from a part of England in which it was absolutely unknown. The time of the dissolving of the catgut was the time of being infected, and that had made it impossible for her to exonerate the catgut.

Mr. Pearson recounted the clinical history of one of the cases alluded to by Mr. Gunn, in which the patient died about twenty-eight or thirty hours after the onset.

Mr. Blayney said it seemed difficult to get over the fact that in every single case catgut had been used. They knew the source of the catgut and the probability of its being infected, which made the conclusion of its responsibility all the more probable. The extreme virulence of the cases seemed to be at variance with the results of the bacteriological examination. The conditions inside the body were not such as would be expected to favour the growth of the bacillus; in two of the cases there was no suppuration, and therefore no septic organism to prepare the way for the bacillus, and the tissues were well supplied with oxygen, which was also unfavourable to the bacillus.

Mr. Gunn, in reply, said Dr. Richardson had made extensive inquiries as to the methods of sterilisation employed, and had then come to the conclusion that there was no absolutely perfect method.

SECTION OF MEDICINE.

President—W. G. Smith, M.D., F.R.C.P.I.

Sectional Secretary—F. C. Purser, M.D., F.R.C.P.I.

Friday, May 14, 1909.

The President in the Chair.

Progressive Bulbar Paralysis.

Drs. O'Carroll and Purser exhibited a case of progressive bulbar paralysis in a man, fifty-six years of age. A year ago the patient first noticed a certain amount of difficulty in his speech. It was very indistinct, but still intelligible. He was now hardly able to protrude the tongue beyond the lips. He had a little

difficulty in getting food back, but he did not complain of difficulty in swallowing, except occasionally with liquids. He complained of difficulty in holding his head up. There was a little wasting of the muscles of the thumb, and of the biceps and triceps of the right side. The knee-jerks of each side were sharp, and occasionally, on stroking the sole of the left foot, Babinski's sign was found.

Locomotor Ataxia.

Drs. O'Carroll and Purser also exhibited a case which had been diagnosticated as locomotor ataxy. The patient was a young man, twenty-three years of age, married at nineteen, the father of two healthy children. There had been no miscarriages. There was a distinct history of congenital lues. About a year ago he got suddenly weak in his left leg, with a pain in his knee. Since then he had had a progressive difficulty in walking. Some two years previously he had "seen double" for a short time. His present condition was that he had not got paralysis of any muscles, but had considerable difficulty in walking, and was very ataxic. Absence of knee-jerks. The pupils contracted neither to accommodation nor to light. He appeared to have no loss of sensation in the limbs, but was rather slow in recognising touches on the left leg, especially from the knee down. He had a certain amount of difficulty in passing water; he often had to press, and sometimes it came away without sufficient warning. He had always been a little deaf.

Hereditary Ataxia.

Dr. Drury exhibited two cases of hereditary ataxia—sisters, aged eleven and thirteen, who had had the disease noticed about three and five years respectively. The younger was the much more advanced case. She stood fairly well with the feet apart, but could not balance at all with her eyes closed. The elder girl had sometimes a slight shaking of the hand, which was noticeable only when she was watched closely. There was no sensory disturbance or disturbance of the sphincters. The eye-symptoms were variable. In the younger girl there was slight nystagmus, but some days it was absent altogether. In both cases there was a total loss of knee-jerks. The limbs were well nourished. The younger girl showed well-marked lateral curvature, and both feet were getting flat. She had a systolic murmur heard near the apex; and at the base of the heart she had a loud systolic murmur when lying down.

which disappeared when she sat up. The day following the observation of the latter murmur it was exactly the reverse—that is, it was absent when lying down, and present when erect; it varied from day to day. Her sister had the same. When they came to hospital they were very thin, but they had grown fatter and better in colour after a couple of months on arsenic.

Idiopathic Muscular Atrophy.

Dr. Drury also exhibited a case of idiopathic muscular atrophy in a young man, aged twenty-four. The patient had not noticed anything peculiar about his condition, except that he knew he was not a very powerful person. There was great thinness and want of muscle everywhere. There was no actual atrophy, but he took it that the disease was still in an early stage. Such cases were usually met with in groups, but there was no history of such in the present case. Although they could not find anything in the way of thoracic disease, still he had extremely marked myoidema. His grasp was feeble, but he had quite well-marked knee-jerks.

A Note on Grocco's Paravertebral Triangle.

Dr. T. G. Moorhead read a paper on Grocco's Triangle, giving his observations on the subject for some years past. It will be found in the number of the Journal for June, 1909 (Vol. CXXVII., No. 450, New Series, Page 417).

Dr. Kirkpatrick said he had looked for the sign during the past two years, and had endeavoured to demonstrate it. He could sometimes demonstrate it to his own satisfaction, but he had often failed to do so to others looking on. It was in cases of small effusion that the sign was of particular value, and it was in such cases that it was very difficult to elicit it.

The President said that, short of *post-mortem* evidence, some mystification hung over the subject. It took ten ounces of fluid to produce recognisable physical signs, and in cases of large effusion the sign was hardly necessary.

Dr. Moorhead, in reply, said he was an advocate of early removal of fluid, and endeavoured to demonstrate it. In three of the five cases in which he did not get the sign he also demonstrated fluid, but he had not been able to demonstrate the relationship between the size of the triangle and the effusion.

Glioma of the Spinal Cord.

Dr. Peacocke read a paper on a case of glioma of the spinal cord in a girl, aged eleven.

SECTION OF OBSTETRICS.

President—E. H. Tweedy, F.R.C.P.I.

Sectional Secretary—Henry Jellett, M.D., F.R.C.P.I.

Friday, May 21, 1909.

The President in the Chair.

Exhibits.

The President exhibited specimens of fibroids, with red degeneration, removed six weeks after delivery. The woman had been sent to him six months pregnant, and with a large myoma. He kept her over two months in hospital. He induced labour at full term. The child was dead. On the third day her temperature and pulse rose, and on the fourth day the temperature reached 103°. There was great tenderness of the abdomen, and he became very uneasy about the case. He asked Sir William Smyly to see her in consultation on the fifth day with a view to immediate operation. Sir William advised postponement of the operation, and the woman got gradually better. When her temperature became normal he removed the tumour by supra-vaginal hysterectomy. It showed in a very characteristic manner red degeneration, which was a disease that apparently very rarely occurred save in pregnancy. High temperature was a constant symptom of red degeneration; and this he thought might arise apart from a germ invasion, and be due to absorption of toxic matter found in the degenerating myoma.

Dr. Purefoy said the change noticed in one of these tumours was one of the least common forms of degeneration, and one of which they knew least. He was not quite convinced that the temperature was due to the red degeneration. He was inclined to think that it was connected with a certain degree of localised sepsis.

Dr. Jellett said he was watching a patient who came to him six months pregnant with a large myoma below the fœtus, filling the pelvis. The patient had been going on very well since. In such a case, where there was a large myoma on the posterior wall of the uterus, filling the hollow of the sacrum, and in which the cervix was jammed above the symphysis, he would like to know how long Dr. Tweedy would allow her to remain in labour. Sometimes tumours that were firmly impacted did get drawn up,

but in his case it seemed rather hopeless to expect the tumour to do so.

Dr. Rowlette said there were certain points about red degeneration which were fairly fixed. It was commonly found associated with pregnancy, and seldom in other conditions. In almost every myoma associated with pregnancy which he had seen there had been more or less red degeneration. It was certainly a necrotic change of some sort, as the tissue failed to stain. In pregnancy the entire tissue of the uterus was in a highly vascular condition, and something interfering with the blood supply, causing stasis in the veins, might cause a diffusion of blood pigment. There was no doubt that in some cases the red degeneration might give rise to temperature, as it was liable to be affected by septic or putrefactive organisms.

The President, in reply, said the myomata were chiefly situated on the fundus, but also encroached on the lower uterine segment. It was only when he became convinced that the growth had undergone degeneration that he determined not to let her run the risk of another pregnancy. He thought Dr. Jellett's case was plain sailing. His patient should not be allowed even to fall into labour. He should calculate the time of full term, and perform Cæsarean section. After removing the child it would be easy to remove the uterus. The myoma was almost certain to degenerate if she was allowed to fall into labour. He thought there was a toxin that could raise the temperature apart from germ invasion.

Some Pathological Conditions of the Female Urethra.

Dr. Purefoy read a paper so entitled.

Dr. FitzGibbon recalled a case in which treatment consisted of passing a probe up the urethra, with some cotton wool on the end, and either an antiseptic or some form of caustic applied to the cavity, out of which from 20 minims to half a drachm of pus could be squeezed. It gradually healed after three or four months, though he had no doubt that it would have been cured quicker if radical methods could have been adopted.

Dr. Jellett said that he thought that, if possible, in cases of urethral cysts one should try to get away all traces of the cyst wall, and bring the mucous membrane over it, as by so doing there would be a better chance of a permanent result at one operation.

Dr. E. H. Tweedy said the difficulty of dissecting out an abscess cavity without infecting the raw surface was very great, and he thought Dr. Purefoy's plan was perfectly surgical. He had seen a condition that Dr. Purefoy spoke of incidentally, but he had not seen it described—an ulceration around the urethra that ran down towards the posterior fourchette. It was absolutely indolent, and occurred in elderly women. It was completely cured by incision, but no other remedy that he knew of could cure it.

Dr. Purefoy, in reply, said Dr. Jellett's method was theoretically the better one, but it was not always the best in practice. Howard Kelly treated such a case in the radical way, and had to deal with a fistula afterwards.

A Case illustrating the Toxæmia of Pregnancy complicated by Rupture of the Uterus.

Dr. Solomons read a paper so entitled.

Dr. E. H. Tweedy said he did not remember a case that bristled with so many points of interest as this one. How was it that in one case a dead fœtus could lie in the uterus and not do any harm, whereas in another case the death of the fœtus was followed by severe toxic symptoms, and how was it that in eclampsia the fœtal death was considered of favourable omen? The case was remarkable in that ascites arose as a consequence of the toxin, which he thought showed that the liver had been involved rather than the kidneys. The elucidation of such cases would require the services of a physiological chemist, and showed the deficiency in that respect of our hospitals. Dr. Solomon's case gave positive proof that there was a toxin present within the uterus, although the statement had never been accepted. There was a great future for the hospital that could spend money on a special department to take such cases in hand and investigate them thoroughly. He had thought it required a tight plug in the vagina to cause a rupture of the uterus. This case proved that they could not artificially dilate a cervix; they tore it, but very few were aware that they did so. He had never examined a woman whose os was artificially dilated without finding a cervical tear.

Dr. Ashe thought chloasma might be due to some form of toxæmia.

Dr. FitzGibbon recalled a case in which rupture of the cervix

extending into the lower uterine segment was found about an hour after delivery, though there had been no previous indication of the rupture.

Dr. Jellett suggested that the cervix was probably in a condition of abnormal softening, in which state it would easily tear. It had been stated that if one found a cervix torn it was proof that the woman had been delivered artificially, but he had seen a patient who had never had a full term child, and never had an operation of any kind, in whom the cervix was torn.

Dr. Purefoy recalled his record of a case in which a lady received a large bilateral tear, as a consequence of the birth of twins that were so small that his ring fitted on to their wrist. He had recorded it as a positive proof that the cervix could tear independently of instrumental delivery. He had never seen a cervix artificially opened without tearing. In Dr. Solomons' case the cervix was not soft. His experience was that it was the hard cervix that tore.

Dr. Solomons, in reply, said he had seen a good many cases where patients had said they had never had instruments, and yet the cervix had been torn. He thanked the speakers for their remarks.

ROYAL COLLEGE OF SURGEONS OF EDINBURGH.

At a meeting of the College, held on July 22, 1909, the following gentlemen were elected Fellows:—Richard William Anthony, M.B., C.M., Captain Indian M.S.; Alexander Watt Beveridge, M.B., Ch.B., Edinburgh; Frederic James Brodie, M.D., Toronto; Robert Donaldson, M.B., Ch.B., Liverpool; Ethelbert William Dyer, M.B., Ch.B., Edinburgh; Edward Alexander Elder, M.B., Ch.B., Edinburgh; Carlton Atkinson Ellis, M.R.C.S. Eng., London, N.; Ernest George Ffrench, M.D., Captain R.A.M.C.; Samuel Thompson Irwin, M.B., M.Ch., Belfast; Harley Patterson Milligan, M.D., Edinburgh; Ronald Roderick Murray, M.B., Ch.B., Edinburgh; Herbert Charles Orrin, L.R.C.S.E., Edinburgh; John Alexander Pottinger, M.B., Ch.B., Stromsay; Eliyatamby Visuvalingam, Ratnam, L.R.C.S.E., Colombo; Harold Ernest Rawlence, M.B., M.R.C.S. Eng., Edinburgh; Alexander Macdonald Westwater, L.R.C.S.E., Liaoyang, Manchuria.

SANITARY AND METEOROLOGICAL NOTES.

Compiled by Sir John Moore.

Vital Statistics.

For four weeks ending Saturday, July 17, 1909.

IRELAND.

The average annual death-rate represented by the deaths—exclusive of deaths of persons admitted into public institutions from without the respective districts—registered in the week ended July 17, 1909, in the Dublin Registration Area and the twenty-one principal provincial Urban Districts of Ireland was 13.4 per 1,000 of their aggregate population, which for the purposes of these returns is estimated at 1,142,308. The deaths registered in each of the four weeks ended Saturday, July 17, and during the whole of that period in the several districts, alphabetically arranged, correspond to the following annual rates per 1,000. In some cases, owing to deaths not having been registered within the week in which they occurred, the rates do not fairly represent the weekly mortality :—

Towns, &c.	Week ending				Average Rate for 4 weeks	Towns &c	Week ending				Average Rate for 4 weeks
	June 26	July 3	July 10	July 17			June 26	July 3	July 10	July 17	
2 Town Districts	17.7	17.1	15.6	13.4	16.0	Lisburn -	27.3	31.8	13.6	9.1	20.4
Armagh -	13.7	—	6.9	—	5.2	Londonderry	23.0	12.1	14.5	12.1	15.4
Ballymena	28.7	19.2	14.4	14.4	19.2	Lurgan -	22.1	26.6	17.7	8.9	18.8
Belfast -	14.8	14.4	13.9	11.2	13.6	Newry -	8.4	12 6	21.0	12.6	13.7
Clonmel -	—	20.5	—	15.4	9.0	Newtownards	5.7	11.4	57.2	5.7	20.0
Cork -	20.5	21.2	24.7	14.4	20.2	Portadown -	25.8	15.5	20.7	15.5	19.4
Drogheda -	24.5	16.3	8.2	8.2	14.3	Queenstown	19.8	6.6	26.4	6.6	14.9
Dublin (Reg. Area) -	19.6	18.5	15.6	16.9	17.6	Sligo -	28.8	14.4	9.6	9.6	15.6
Dundalk -	12.0	16.0	19.9	12.0	15.0	Tralee -	26.4	26.4	15.9	21.1	22.4
Galway -	7.8	42.7	35.0	27.2	28.2	Waterford -	29.2	25.3	9.7	17.5	20.4
Kilkenny -	19.7	9.8	14.7	4.9	12.3	Wexford -	4.7	18.7	18.7	9.3	12.9
Limerick -	8.2	13.7	5.5	4.1	7.9						

The deaths (excluding those of persons admitted into public institutions from without the respective districts) from certain epidemic diseases registered in the 22 districts during the week ended Saturday, July 17, 1909, were equal to an annual rate of 1.1 per 1,000, the rates varying from 0.0 in seventeen of the districts to 4.5 in Lisburn—the 2 deaths from all causes for that district including one from measles. Among the 83 deaths from all causes registered in Belfast are 2 from whooping-cough, one from enteric fever, 5 from diarrhœal diseases, and one from cerebro-spinal fever. Of the 21 deaths from all causes in Cork 2 are from whooping-cough; and 2 deaths from whooping-cough are also included in the 9 deaths from all causes registered in Waterford.

DUBLIN REGISTRATION AREA.

The Dublin Registration Area consists of the City of Dublin as extended by the Dublin Corporation Act, 1900, together with the Urban Districts of Rathmines, Pembroke, Blackrock, and Kingstown. The population of this area is 398,356, that of the City being 306,902, Rathmines 36,567, Pembroke 28,506, Blackrock 8,759, and Kingstown 17,622.

In the Dublin Registration Area the births registered during the week ended Saturday, July 17, 1909, amounted to 179—84 boys and 95 girls; and the deaths to 136—63 males and 73 females.

DEATHS.

The deaths registered represent an annual rate of mortality of 17.8 in every 1,000 of the population. Omitting the deaths (numbering 7) of persons admitted into public institutions from localities outside the Area, the rate was 16.9 per 1,000. During the twenty-eight weeks ending with Saturday July 17th, the death-rate averaged 24.0, and was 1.6 below the mean rate for the corresponding portions of the ten years 1899–1908.

The deaths included 2 from measles, 3 from diphtheria, 2 from enteric fever, 5 from diarrhœal diseases and one death from influenza. In each of the three preceding weeks, deaths from measles had been 0, 2, and 0; deaths from diphtheria had been 0, one, and 2; deaths from enteric fever had been 0, 0, and 0; deaths from diarrhœal diseases had been 3, 6, and 2; and deaths from influenza had been 0, 4, and 0.

Lobar-pneumonia and broncho-pneumonia each caused one death, and there were 5 deaths from *pneumonia* (not defined).

The deaths (23) from all forms of tuberculous disease include 14 from tubercular phthisis (*phthisis*), 3 from tubercular meningitis, one from tubercular peritonitis, and 5 deaths from other forms of the disease. Deaths from all forms of tuberculous disease in the three preceding weeks had been 45, 26, and 29 respectively.

There were 5 deaths from carcinoma, and 4 from cancer (undefined).

Premature birth was the registered cause of death of 4 infants.

Of 13 deaths attributed to diseases of the brain and nervous system 6 were from *convulsions*. Among the latter 2 deaths were of infants under one month, 2 of infants between the ages of one month and one year, and 2 of children between the ages of one year and 5 years.

Diseases of the heart and blood vessels caused 28 deaths, and bronchitis caused 8 deaths.

Four deaths were assigned to accidental causes, of these one was by burning and 2 were by drowning.

In 2 instances the cause of death was "uncertified," there having been no medical attendant during the last illness. These cases include the death of one infant under one year of age and the death of one person aged 64 years.

Forty-four of the persons whose deaths were registered during the week were under 5 years of age (24 being infants under one year, of whom 14 were under one month old) and 35 were aged 60 years and upwards, including 22 persons aged 70 and upwards, of whom 8 were octogenarians, and 2 (females) were stated to have been aged 90 and 91 years respectively.

The Registrar-General points out that the names of the cause of death printed above in italics should be avoided whenever possible in Medical Certificates of the Cause of Death.

STATE OF INFECTIOUS DISEASE IN THE DUBLIN REGISTRATION AREA AND IN BELFAST.

The usual returns of the number of cases of infectious diseases notified under the "Infectious Diseases (Notification) Act, 1889," as et forth in the following table, have been furnished by Sir Charles A. Cameron, C.B., M.D., Medical Superintendent Officer of Health for the City of Dublin; Mr. Fawcett, Executive Sanitary

Officer for Rathmines and Rathgar Urban District; Mr. Manly, Executive Sanitary Officer for Pembroke Urban District; Mr. Heron, Executive Sanitary Officer for Blackrock Urban District; Dr. R. A. O'Donovan, Medical Superintendent Officer of Health for Kingstown Urban District; and Dr. Bailie, Medical Superintendent Officer of Health for the City of Belfast.

TABLE SHOWING THE NUMBER OF CASES OF INFECTIOUS DISEASES notified in the Dubl Registration Area (viz.—the City of Dublin and the Urban Districts of Rathmin and Rathgar, Pembroke, Blackrock, and Kingstown), and in the City of Belfas during the week ended July 17, 1909, and during each of the preceding thr weeks. An asterisk (*) denotes that the disease in question is not notifiable in t District.

CITIES AND URBAN DISTRICTS	Week ending	Small-pox	Measles	Rubella, or Epidemic Rose Rash	Scarlet Fever	Typhus	Relapsing Fever	Diphtheria	Membranous Croup	Pyrexia (origin uncertain)	Enteric or Typhoid Fever	Erysipelas	Puerperal Fever	Varicella	Whooping-cough	Cerebro-spinal Fever	Total
City of Dublin	June 26	–	*	*	3	–	–	8	–	6	12	17	–	*	*	*	46
	July 3	–	*	*	6	–	–	5	–	4	13	11	–	*	*	*	
	July 10	–	*	*	6	–	–	9	–	1	6	7	–	*	*	*	
	July 17	–	*	*	8	–	–	7	–	3	5	10	–	*	*	*	
Rathmines and Rathgar Urban District	June 26	–	*	*	8	–	–	–	–	1		–	–	*	*		
	July 3	–	*	*	14	–	–	–	–	–	1	–	–	*	*		1
	July 10	–	*	*	2	–	–	2	–	–	–	–	–	*	*		
	July 17	–	*	*	5	–	–	–	–	–	1	–	–	*	*	*	
Pembroke Urban District	June 26	–	1	–	–	–	–	–	–	–	–	–	–	*	8		
	July 3	–	1	–	–	–	–	–	–	–	–	–	–	*	3		
	July 10	–	–	–	–	–	–	–	–	–	1	–	–	*	7		
	July 17	–	6	–	1	–	–	–	–	–	–	–	–	*	6		
Blackrock Urban District	June 26	–	*	*	–	–	–	–	–	–	–	–	–	*	*		
	July 3	–	*	*	–	–	–	3	–	–	–	–	–	*	*		
	July 10	–	*	*	–	–	–	–	–	–	–	–	–	*	*		
	July 17	–	*	*	–	–	–	–	–	–	–	1	–	*	*		
Kingstown Urban District	June 26	–	*	*	–	–	–	1	–	–	–	–	–	*	*		
	July 3	–	*	*	–	–	–	–	–	–	1	–	–	*	*		
	July 10	–	*	*	–	–	–	–	–	–	–	–	–	*	*		
	July 17	–	*	*	–	–	–	–	–	–	–	–	–	*	*		
City of Belfast	June 26	–	*	*	3	–	–	5	–	1	2	7	2	*	*	–	
	July 3	–	*	*	4	–	–	–	–	2	–	1	1	*	*	–	
	July 10	–	*	*	8	–	–	3	–	1	2	4	1	*	*		
	July 17	–	*	*	3	–		3	–	2	2	1	–	*	*	1	

(*a*) Not including one case of cerebro-spinal fever reported during week ended June 26th.

CASES OF INFECTIOUS DISEASES UNDER TREATMENT IN DUBLIN HOSPITALS.

During the week ended July 17, 1909, 5 cases of measles were admitted into hospital, 11 were discharged, and 23 cases remained under treatment at its close.

Twenty-four cases of scarlet fever were admitted to hospital,

10 were discharged, and 82 cases remained under treatment at the close of the week. This number is exclusive of 20 convalescents from the disease under treatment in Bencavin, Glasnevin, the Convalescent Home of Cork Street Fever Hospital.

Two cases of typhus remained under treatment in hospital at the end of the week.

Seven cases of diphtheria were admitted to hospital, 6 were discharged, there were 3 deaths, and 28 patients remained under treatment at the close of the week.

Five cases of enteric fever were admitted to hospital, 11 were discharged, there was one death, and 27 cases remained under treatment in hospital at the close of the week.

In addition to the above-named diseases, 13 cases of pneumonia were admitted to hospital, 8 were discharged, and 29 cases remained under treatment at the end of the week.

ENGLAND AND SCOTLAND.

The mortality in the week ended Saturday, July 17, in 76 large English towns, including London (in which the rate was 10.6), was equal to an average annual death-rate of 11.5 per 1,000 persons living. The average rate for 8 principal towns of Scotland was 12.5 per 1,000, the rate for Glasgow being 11.4 and for Edinburgh 12.8.

INFECTIOUS DISEASE IN EDINBURGH.

The Registrar-General has been favoured by A. Maxwell Williamson, M.D., B.Sc., Medical Officer of Health for Edinburgh, with a copy of his Return of Infectious Diseases notified during the week ended July 17. From this report it appears that of a total of 63 cases notified, 40 were of scarlet fever, 10 of phthisis, 9 of diphtheria, 2 of enteric fever, one of cerebro-spinal fever, and one of erysipelas.

Among the 380 cases of infectious diseases in hospital at the close of the week were 158 cases of scarlet fever, 78 of measles, 47 of phthisis, 40 of whooping-cough, 34 of diphtheria, 9 of enteric fever, 3 of erysipelas, and 3 of cerebro-spinal fever.

Meteorology.

Abstract of Observations made in the City of Dublin, Lat. 53° 20′ *N., Long.* 6° 15′ *W., for the Month of July,* 1909.

Mean Height of Barometer,	29.910 inches.
Maximal Height of Barometer (19th, at 9 a.m.),	30.305 ,,
Minimal Height of Barometer (25th, at 9 a.m.),	29.315 ,,
Mean Dry-bulb Temperature,	58.3°.
Mean Wet-bulb Temperature,	55.1°.
Mean Dew-point Temperature,	52.1°.
Mean Elastic Force (Tension) of Aqueous Vapour,	.392 inch.
Mean Humidity,	80.6 per cent.
Highest Temperature in Shade (on 3rd),	73.2°.
Lowest Temperature in Shade (on 28th),	45.1°.
Lowest Temperature on Grass (Radiation) (28th),	41.8°.
Mean Amount of Cloud,	65.2 per cent.
Rainfall (on 22 days),	3.316 inches.
Greatest Daily Rainfall (on 24th),	.532 inch.
General Directions of Wind,	W., W.N.W., N.W.

Remarks.

A cloudy, rainy or showery, cool, and breezy month of N.W. and W. winds. The broken weather which set in about the summer solstice lasted in a more or less marked degree through the greater part of July. In the week ended Saturday, the 17th, however, there were several fair intervals in most parts of the British Isles, and strangely enough at Kilkenny and in the Scilly Islands the week was quite rainless. The following week, also, was chiefly fine in the South and East of England, although unsettled and showery in Ireland, Scotland, and the north of England. The broken weather culminated in the closing week of the month—rain fell daily in Dublin, the measurement much exceeding an inch (1.202 inches). During this period two cyclonic systems passed right across the United Kingdom, the northerly winds of the second disturbance causing the thermometer to fall to 40° at Wick, 42° at Birr Castle, and 45° in Dublin on the 28th. It is noteworthy that the month, so broken elsewhere, was "very fine" in the Co. Cork, as will be seen by the rainfall returns from that county, which are given below.

In Dublin the arithmetical mean temperature (59.2°) was 1.3° below the average of the 35 years 1871–1905 (60.5°); the mean dry-bulb readings at 9 a.m. and 9 p.m. were 58.3°. In

the forty-five years ending with 1909, July was coldest in 1879 (" the cold year ") (M. T. = 57.2°). It was warmest in 1905 (M. T. = 63.8°) ; and in 1887 (M. T. = 63.7°). In 1908 the M. T. was 61.0°.

The mean height of the barometer was 29.910 inches, or .005 inch below the corrected average value for July—namely, 29.915 inches. The mercury rose to 30.305 inches at 9 a.m. of the 19th, and fell to 29.315 inches at 9 a.m. of the 25th. The observed range of atmospheric pressure was, therefore, 0.990 inch.

The mean temperature deduced from daily readings of the dry-bulb thermometer at 9 a.m. and 9 p.m. was 58.3°, or 3.5° above the value for June, 1909. Using the formula, *Mean Temp.* = *Min.* + (*Max.* — *Min.* × .465), the value was 58.7°, or 1.4 below the average mean temperature for July, calculated in the same way, in the thirty-five years, 1871–1905, inclusive (60.1°). The arithmetical mean of the maximal and minimal readings was 59.2°, compared with a thirty-five years' average of 60.5°. On the 3rd the thermometer in the screen rose to 73.2°—wind, W.S.W. ; on the 28th the temperature fell to 45.1°—wind, N.W. The minimum on the grass was 41.8°, also on the 28th.

The rainfall was 3.316 inches, distributed over 22 days. The average rainfall for July in the thirty-five years, 1871–1905, inclusive, was 2.680 inches, and the average number of rain days was 17. The rainfall, therefore, and also the rain days were considerably above the average. In 1880 the rainfall in July was very large—6.087 inches on 24 days ; in 1896, also, 5.474 inches fell on 18 days. On the other hand, in 1870, only .539 inch was measured on 8 days ; in 1869 the fall was only .739 inch on 9 days ; and in 1868 .741 inch fell on but 5 days. In 1908, 2.080 inches fell on 13 days.

High winds were noted on 14 days, but never attained the force of a gale (8). Temperature reached or exceeded 70° in the screen on 3 days, compared with 9 days in 1908 and 1907, 10 in 1906, 17 in 1905, 10 in 1904, and 7 in both 1902 and 1903. The thermometer failed to reach 60° on the 25th and 27th. In July, 1887, temperature reached or exceeded 70° in the screen on no fewer than 17 days. In 1888 the maximum for July was 68.7°.

A solar halo was seen on the 1st, 8th, 12th and 14th. A brief thunderstorm occurred on the 10th, when also hail fell.

The rainfall in Dublin during the seven months ending July 31st amounted to 15.377 inches on 106 days, compared with 13.809

inches on 120 days in 1908, 14.358 inches on 127 days in 1907, 13.664 inches on 122 days in 1906, 11.022 inches on 109 days in 1905, 13.905 inches on 117 days in 1904, 19.072 inches on 131 days in 1903, 15.507 inches on 115 days in 1902, 11.432 inches on 93 days in 1901, only 7.935 inches on 80 days in 1887, and a thirty-five years' (1871–1905) average of 14.71 inches on 113 days.

At the Normal Climatological Station in Trinity College, Dublin, the observer, Mr. William J. Good, reports that the mean height of the barometer was 29.912 inches, the range of atmospheric pressure being from 30.311 inches at 9 p.m. of the 19th to 29.320 inches at 9 a.m. of the 25th. The mean value of the readings of the dry-bulb thermometer at 9 a.m. and 9 p.m. was 59.2°. The arithmetical mean of the daily maximal and and minimal temperatures was 59.3°, the mean maximum being 65.7°, and the mean minimum 52.8°. The screened thermometers rose to 74.0° on the 2nd and 3rd, and fell to 45.0° on the 28th. On the 12th the grass minimum was 40.2°. Rain fell on 18 days to the amount of 3.249 inches, the greatest fall in 24 hours being .470 inch on the 23rd. The duration of bright sunshine, according to the Campbell-Stokes recorder, was 139.8 hours, of which 12.7 hours occurred on the 19th. The mean daily duration was 4.5 hours. In July, 1904, there were 201 hours of bright sunshine, in 1905, 162.2 hours, in 1906, 184.8 hours, in 1907, 178.1 hours, and in 1908, 174.3 hours. The mean sub-soil temperatures at 9 a.m. were—at 1 ft., 59.5°; at 4 ft., 56.3°. The one-foot thermometer ranged between 61.4° on the 3rd and 57.5° on the 28th. The four-feet thermometer ranged from 54.8° on the 1st to 57.0° on the 23rd and following days, up to and including the 26th.

Dr. Arthur S. Goff reports that at Lynton, Dundrum, County Dublin, the rainfall was 2.74 inches on 19 days. The maximal fall in 24 hours was .65 inch, measured on the 24th. The mean temperature was 60.7°, the range being from 74° on the 1st to 47° on the 28th. Thunder occurred on the 3rd and 10th. Hail fell on the 10th and 23rd. In July, 1901, 2.65 inches of rain fell at this station on 11 days; in 1902, 4.27 inches on 19 days; in 1903, 3.66 inches on 24 days; in 1904, 1.22 inches on 17 days; in 1905, .98 inch on 20 days; in 1906, 1.25 inches on 18 days; in 1907, 1.79 inches on 16 days, and in 1908, 2.55 inches on 15 days.

At Cloneevin, Killiney, Co. Dublin, Mr. Robert O'Brien Furlong, C.B., reports that the rainfall was 2.02 inches on 18 days, compared with a twenty-four years' (1885-1908) average of 2.408 inches on 15.2 days. On the 24th the rainfall was .44 inch. In July, 1908, 2.30 inches fell on 13 days; in 1907, 1.94 inches fell on 18 days; in 1906, .97 inch on 14 days; in 1905, 1.03 inches on 15 days; in 1904, only .77 inch on 15 days; in 1903, 3.54 inches on 19 days; in 1902, 3.64 inches on 13 days; in 1901, 2.80 inches on 13 days. Thunder and lightning occurred on the 3rd. Since January 1, 1909, 14.47 inches of rain have fallen on 98 days at this station, compared with 13.54 inches on 95 days in the corresponding 7 months of 1901, 16.90 inches on 111 days in 1902, 17.39 inches on 122 days in 1903, 13.69 inches on 110 days in 1904, 13.59 inches on 104 days in 1905, 12.92 inches on 118 days in 1906, 13.61 inches on 114 days in 1907, and 13.53 inches on 114 days in 1908. The lowest July fall was .70 inch on 9 days in 1885; the highest, 6.72 inches on 20 days in 1896.

Mr. T. Bateman reports that the rainfall at The Green, Malahide, Co. Dublin, was 3.389 inches on 23 days. The largest daily fall was .705 inch on the 30th. The mean shade temperature was 58.3°, the extremes being—highest, 74.5° on the 3rd; lowest, 41.5° on the 27th.

At the Ordnance Survey Office, Phœnix Park, rain fell on 19 days to the amount of 2.880 inches, the greatest rainfall in 24 hours being .425 inch on the 24th. The total duration of bright sunshine was 151.5 hours, the longest daily sunshine being 13.8 hours on the 19th.

Mr. R. Cathcart Dobbs, J.P., reports that the rainfall at Knockdolian, Greystones, Co. Wicklow, was 2.496 inches on 16 days, the maximal daily fall being .750 inch on the 24th. Since January 1, 1909, the rainfall at that station equals 17.841 inches on 88 days.

Mr. Arthur Victor Price reports that, at Clonsilla, Greystones, Co. Wicklow, rain fell on 17 days to the amount of 2.12 inches, the greatest fall in 24 hours being .69 inch on the 24th. The mean daily temperature was 58.8°. On the 3rd the thermometer rose to 74° in the shade, on the 26th it fell to 45.0°.

Dr. Launcelot T. Burra reports that rain fell at the Royal National Hospital for Consumption for Ireland, Newcastle, Co. Wicklow, on 17 days to the amount of 2.375 inches. The greatest fall in 24 hours was .660 inch on the 24th. The mean temperature

of the month was 58.5°, the thermometer in the screen rising to 73.0° on the 3rd and falling to 45.2° on the 28th.

At Cork Mr. W. Miller registered 0.97 inch of rain on only 7 days, the fall being 1.66 inches short of the average for July. The greatest rainfall in 24 hours was .28 inch on the 9th. The rainfall was only about one-third of the average and the least for July since 1901. There were 13 consecutive days without rain before the 22nd. Since January 1, 1909, 18.32 inches of rain have fallen in Cork on 98 days, the measurement being 2.29 inches short of the average for the first seven months of the year.

At the Rectory, Dunmanway, Co. Cork, the Rev. Arthur Wilson, M.A., recorded a rainfall of only 1.61 inches on 18 days. The heaviest falls in 24 hours were—.39 inch on the 31st and .31 inch on the 9th. At Dunmanway, July was a very fine, though cool month. Nearly all the rain which fell was in the early morning or at night. The only precipitation in the daytime, except drizzle or mist, was a steady rainfall from 1 to 5 p.m. of the 9th. On the 24th also there were frequent showers. July thus retains its position as the driest month of the year at Dunmanway, the average rainfall in five years being 3.15 inches, June coming next with 3.49 inches. The weather was very warm on the 1st, 17th, 18th, 19th and 31st.

LITERARY NOTE.

The rapid success which attended the publication of Dr. T. D. Savill's "System of Clinical Medicine" has rendered a second edition necessary, and the author has taken advantage of this to correct and revise the whole work throughout. The new edition will be in one volume, and will be issued by Mr. Edward Arnold about September 1st.

RAT DESTRUCTION.

The Lister Institute of Preventive Medicine, reporting upon the Danysz Virus Bacillus, has declared it to be entirely different from the bacillus which occasions typhoid fever, and adds that the extensive employment of the virus in many places without ill result to mankind shows that the danger of human infection, if it exists, is small. In this connection it may be mentioned that rats and mice are always liable to carry infection, and should therefore, at all times, be prevented from having access to food intended for human consumption.

PERISCOPE.

ROYAL COLLEGE OF PHYSICIANS OF IRELAND AND ROYAL COLLEGE OF SURGEONS IN IRELAND.

THE following are the results of the recent Summer Conjoint Examinations in Ireland by the Royal College of Physicians and the Royal College of Surgeons :—

Preliminary Examination—W. J. A. Laird (with Honours), R. A. Austin, A. J. W. Lindsey Birchall, I. C. J. Blake, J. Campbell, W. P. Cooney, C. P. F. J. Coyne, G. Dunne, I. J. Eppel, W. A. N. Fox, F. P. Freeman, T. J. Glynn, M. P. Hatch, G. Healy, P. E. Kelly, A. Merrin, W. G. D. M'Call, J. B. Minford, N. Mulliner, J. M. Plunkett.

First Professional Examination—M. J. Burns (with Honours), E. Harnett (with Honours), W. I. Adams, P. Ashe, J. C. Blackham, C. C. Boyle, E. Connell, J. D. Cherry, J. Crowley, J. Cohen, P. D. Daly, D. Donohoe, W. St. L. Dowse, T. R. Elliott, D. J. F. Flanagan, B. Goldberg, T. Gray, M. B. Gunn, M. Heenan, E. E. Hobson, F. J. Hunt, A. Humphreys, F. J. Kennedy, M. P. Lee, J. Magner, J. J. Magner, P. M. Moriarty, M. Morrin, B. J. Mullin, K. M'Grath, F. T. M'Kenna, L. M'Keever, J. W. O'Brien, T. F. O'Connor, J. P. O'Driscoll, E. B. Palmer, G. E Pepper, B. Scher, N. A. Sheridan, R. Slaney, E. B. Stoney, J. C. Sproule, J. Stokes, T. S. Sullivan, F. C. Ward.

Second Professional Examination—M. J. Hillery (with Honours), T. P. H. Roberts (with Honours), T. T. Buckley, N. S. Deane, H. J. Cotter, S. Griffin, R. Henry, W. H. Johnston, H. K. Kevin, R. Kenefick, T. Kennedy, J. Kearney, A. M'Grath, F. C. M'Carthy, M. Meehan, T. Mulcahy, J. C. O'Farrell, W. R. O'Keeffe, J. C. Ryan, I. M. Swanepoel, J. Walsh, V. J. White.

Third Professional Examination—J. T. Duncan (with Honours), A. E. Bedell, C. J. Bourke, C. P. Corbett, J. Devine, I. A. Dowling, H. C. Gilmore, R. H. Hodges, C. J. Kelly, A. M. Lanphier, H. R. L'Estrange, H. M. E. H. M'Adoo, P. M'Grath, Miss A. H. Mullen, J. O'Kelly, W. A. Swan.

Final Professional Examination—Miss A. H. Mullen (with Honours), H. S. Meade (with Honours), R. H. Adams, P. H. Black, S. Black, J. J. Corr, Miss I. M. Clarke, E. C. Deane, E. Dundon, J. Donoghue, B. W. Farrell, R. R. Fausset, J. W. Flood,

E. A. Gregg, F. N. Harvey, W. Hederman, L. C. Johnston, T. J. Lyons, E. C. MacDermot, D. M'Cormack, J. Marmion, J. Menton, F. J. Morris, J. J. O'Connell, T. P. Seymour, A. Sheridan, J. M. Smyth, P. T. Warren, Miss C. F. Williamson, R. S. White, O. W. J. Wynne.

Examination for the Diploma in Public Health, July, 1909—C. H. Browne, L.R.C.P. and S.I.; A. N. Hardcastle, L.S.A. (Lond), M.R.C.S.E., L.R.C.P. (Lond.), L.M.R.C.P.I.; W. W. L. M'Lean, L.S.A. (Lond.), M.R.C.S.E., L.R.C.P. (Lond.); C. D. Outred, M.R.C.S.E., L.R.C.P. (Lond.); J. L. Pritchard, M.R.C.S.E., L.R.C.P. (Lond.); L. E. Smith, M.D., R.U.I.

TOXICITY OF RESORCIN.

In 1905 Kaiser published a case of acute poisoning after the use of a paste containing 50 per cent. of resorcin. The symptoms were identical with those produced by a poisonous internal dose of the drug. Soon afterwards M. H. Northen published two cases of poisoning from the external use of the same. The first was that of a young man, nineteen years of age, suffering from seborrheic eczema on his back and his extremities. He commenced his treatment with a paste of ichthyol and oxide of zinc, and then used the following ointment: resorcin 75 grammes, precipitated sulphur 75 grammes, zinc ointment 500 grammes. When 120 grammes of the ointment had been used the patient complained of malaise and vertigo. He lay down on his bed and lost consciousness. He quickly became cyanosed; his extremities became very cold, and a copious cold sweat broke out over his whole body. His respirations were quick and shallow, his pulse very rapid, and his pupils pinhole and immobile. He recovered consciousness after a little time for a few minutes and then relapsed into his former somnolent condition, from which it was impossible to rouse him. In vain warm cataplasms were applied to his extremities; he got hypodermics of camphor, and finally was let blood. Four hours afterwards he became conscious, and complained of intense aching pains, violent headache, and a great weariness. He now fell into a slumber, and slept until the evening of the following day, when he awoke without any fever, but with a pulse of 120 to the minute. The urine had neither albumen nor sugar; it was, however, of a green colour when passed, and became black when exposed to the air. It was found to contain phenol and blood pigments. After a few days the patient quite

recovered from the effects of the poison. The second case was that of an infant, eleven days old, who was suffering from pemphigus of the head, chest and arms; otherwise the child was in good health. In the evening an ointment containing 3 per cent. of resorcin was applied, and at 2 a.m. the following morning the nurse found the child dead. The autopsy revealed a greenish brown coloration of the pleura and pericardium; on section the lung and spleen were found greatly tumefied; the kidneys, the heart, and the lymphatic glands were dark brown in colour. The blood vessels were filled with black coagula. The urine found in the bladder and the blood clots contained phenol.—*La Quinzaine Thérapeutique* 10. ix. 202.

LUMBAR ANÆSTHESIA BY NOVOCAÏN.

M. Chaput (*Gaz. des Hôpitaux*, No. 76, 1909) has done one hundred and thirty-five operations, of which thirty-two were laparotomies, under lumbar novocaïn anæsthesia. In no single instance did any unpleasant results follow. He concludes that novocaïn is absolutely innocuous if injected in divided doses of five to seven centigrammes, a dose he has found sufficient for operations on the lower limbs and for hemiopotomy. He has found no contra-indication for its use. He has employed the anæsthetic in a great variety of operations and on subjects of all ages.

THE QUEEN ALEXANDRA SANATORIUM, DAVOS.

The prospective opening of the Sanatorium for the reception of patients early in this autumn was announced from the chair at the Sixth Annual Meeting of the Council, held at 11 Chandos Street, Cavendish Square, W., on July 16th, by the President, The Lord Balfour of Burleigh, K.T., P.C., who has laboured so long and successfully in the difficult task of raising funds. The magnificent donation of £25,000 just received from a munificent sympathiser, who desires that his name shall not be published, not only supplies the necessary balance to complete the work and to open the Sanatorium free from debt, but provides the means for its scientific equipment and for future extensions. For the present the Sanatorium will accommodate 54 patients all in single rooms. But the public rooms are designed for a full complement of 120 patients. The Davos Invalids' Home, the original foundation of the late Mrs. Lord, which for so many

years was the only representative of our national charity in Davos, has now ended its task and fulfilled the purpose for which it was initiated, that of developing into a National Sanatorium. The Home had been granted Her Gracious Majesty's patronage as far back as 1899.

NEW PREPARATIONS AND SCIENTIFIC INVENTIONS.

A Notable Museum Exhibit.

Among the exhibits at the recent meeting of the British Medical Association in Belfast, that of Messrs. Burroughs, Wellcome & Co. contained, in addition to well-known products of the Firm, some new and interesting preparations, which are the results of recent researches.

The advantages possessed by "Ernutin," the active therapeutic principle of ergot in its purest form, are widely recognised. Another preparation of ergot, however, has lately been introduced under the trade name of "Tyramine." "Tyramine" presents the chief active constituent of aqueous extracts of ergot, the organic base, *p*-hydroxyphenylethylamine, which is produced by the action of bacterial and probably other ferments on the amino-acid tyrosin. "Tyramine" may be used for raising the blood pressure in shock or collapse, and for producing contraction of the uterus *post partum*.

The arylarsonates are also important organic preparations of arsenic which have been recently introduced, and are being used with beneficial effect in trypanosomiasis, syphilis and malaria.

Sodium Para-aminophenylarsonate, to which the name of "Soamin" has been given, contains 22.8 per cent. of arsenium (As), and is soluble in five parts of water at 60° F. and in three parts at body temperature, giving a neutral solution which can be sterilised.

"Orsudan" (Sodium 3-methyl-4acetyl-aminophenylarsonate) is even more remarkable for its low toxicity relative to its percentage of arsenium. It is soluble in 2½ parts of water at the body temperature, and recent experiments indicate its utility in cases of malaria.

Another product of laboratory experiment and research is "Nizin," a zinc salt of sulphanilic acid which has proved useful as an antiseptic. Dissolved in the correct proportions, it forms a soothing and non-irritating lotion for inflamed surfaces.

It is interesting to learn that Messrs. Burroughs, Wellcome & Co. have all their serums, vaccines, &c., prepared under the superintendence of a distinguished bacteriologist at the Wellcome Physiological Research Laboratories at Brockwell Hall, Herne Hill, and these products are not allowed to be issued to the profession until they have passed the most rigid tests for standardisation, sterility and toxicity.

"Wellcome" Diphtheria Antitoxic Serum, in addition to the phials containing from 1,000 to 4,000 units, is sent out in another strength—namely, from 1,000 to 5,000 units to each cubic centimetre of fluid, and distinguished as Diphtheria Antitoxic Serum *High Potency*. To meet the difficulty where a precise diagnosis is impossible at an early stage of a disease, a series of polyvalent serums have been introduced. Conspicuous among these is the 'Wellcome" Anti-Streptococcus Serum, *polyvalent*, from horses immunised against cultures of streptococci from no less than sixty sources in a variety of diseases, including erysipelas, scarlet fever, septicæmia, &c.

Now that its importance for diagnostic purposes has been established, considerably increased interest is manifested in preparations of Tuberculin and Tubercle Bacilli, and the series has been amplified. The new and old formulas of Dr. Koch are still used, and the Tubercle Bacilli (killed), both human and bovine, are also issued for the estimation of the Opsonic Index by Wright's method. Also Tubercle Bacilli (killed and finely ground) for agglutination tests.

The "Wellcome" Brand Vaccines are sterilised and accurately standardised, and issued in phials containing 1 c.c. The series now includes "Wellcome" Acne Bacillus Vaccine and "Wellcome" Gonococcus Vaccine.

"Wellcome" Brand Chemicals are the outcome of a constant effort to fix a high standard with regard to the substances used in medicine, and the specimens shown amply maintain the already high reputation of this series. "Wellcome" Brand Chloroform is favourably known to anæsthetists, and is now supplied in 30 c.c. and 60 c.c. sealed tubes, as well as the ordinary glass stoppered bottles.

The importance of sending out solutions for hypodermic and other injections in such a manner that their potency will be unimpaired has not been overlooked, and "Ernutin," "Hemisine" (the active principle of the medulla of the suprarenal

gland), and others in the "Vaporole" series are now sent out in amber-coloured tubes or ampoules, of special design, hermetically sealed, but so constructed that they can easily be broken at the neck, when the contents are required for use.

Under this brand also are issued "Vaporoles" Aromatic Ammonia-glass capsules containing Aromatic Ammonia, each surrounded by absorbent cotton wool and enclosed in a silken sheath. When broken between the fingers they emit a most refreshing and stimulating odour, and present many advantages over the ordinary smelling bottle.

Medicine Cases in great variety were exhibited, including a complete range of "Tabloid" First Aid Equipments, containing "Tabloid" Compressed Bandages and Dressings, with other emergency requirements suitable for tourists and travellers, both at home and abroad. In addition to those fitted with medicines and surgical requirements for the physician's use, very handy cases containing "Soloid" reagents and apparatus necessary for urine, water and sewage analysis, and for bacteriological examination were on view.

"'Hazeline' Snow" and "Hazeline" Cream, presenting the well-known antiseptic and mildly astringent characteristics of "Hazeline" were shown, and there were also two ointments, "Borofax" (Boric Acid Ointment) and "Phenofax" (Carbolic Acid Ointment).

"Opa" Liquid Dentifrice is an elegant and agreeable preparation which efficiently cleanses the teeth. When diluted with water it may be used advantageously as an antiseptic mouth wash.

In "Vana" Tonic Wine the alkaloids of cinchona are associated with glycerophosphate of calcium and dissolved in a pure wine of sound quality and agreeable flavour.

A convenient laxative for children and fastidious patients is provided in "Alaxa" Aromatic Liqueur of Cascara Sagrada "Tabloid" Brand Pastiles are models of excellence as medicinal lozenges; they present in a very acceptable form medicaments which it is desired to dissolve slowly in the mouth. Most of these are intended especially for the throat, but the "Tabloid" Laxative Fruit Pastilles are valued for their gentle and efficient aperient effect.

ALEXANDER FRASER, M.B., C.M., F.R.C.S.I.

THE DUBLIN JOURNAL

OF

MEDICAL SCIENCE.

OCTOBER 1, 1909.

PART I.

ORIGINAL COMMUNICATIONS.

ART. X.—*Pathological Report of the Rotunda Hospital for the year ending 31st October*, 1908.[a] By ROBERT J. ROWLETTE, M.D., Pathologist to the Hospital.

I AM glad to be able to note that more of the students and medical men working at the hospital have made use of the Pathological Laboratory than in previous years.

Seven *post-mortem* examinations were made in the case of adult patients. Brief notes of these are appended:—

CASE I. (Maternity).—Partial autopsy. Annie F., aged thirty-six, died December 23, 1907, after Cæsarean section. Large quantity of blood-stained fluid in abdominal cavity; saline; no bleeding point discovered. Uterus flabby and soft. All other organs healthy.

CASE II. (Gynæcological).—Ann G., aged thirty, died February 15, 1908. Body emaciated. Abdomen flat; operation wound healthy. On opening the abdomen the parietal peritoneum was found much thickened and hyperæmic, at least quarter of an inch thick. No tubercles visible to the naked eye. Great omentum, ascending and descending colon adherent to anterior abdominal wall. Behind this mass, and in front of the small

[a] Read before the Section of Pathology of the Royal Academy of Medicine in Ireland, on Friday, April 16, 1909.

intestines, which were closely adherent, was a large cavity containing blood-stained serum, with masses of clotted serum. Large miliary tubercles studded over small intestine. There were other locules of serum and clot in peritoneal cavity.

Uterus small, with dense peritoneal adhesions. Both *tubes* showed tubercular thickening with nodules. *Ovaries* healthy.

Kidneys slightly enlarged and pale. No tubercles seen.

Pancreas normal.

Spleen congested and friable. Densely adherent to diaphragm and surrounding structures. Surface studded with tubercles.

Liver large; congested; fatty.

Lungs small; retracted. Pleural adhesions. No tubercular lesions discovered.

Heart.—Slight sclerosis of mitral valves. Heart muscle pale.

Pericardium showed small petechiæ, but no tubercles.

Bronchial and *retro-peritoneal glands* apparently normal.

Case III. (Maternity).—A. O'B., aged twenty-five, died March 10, 1909. Peritoneum showed fibrinous exudate in upper region, with adhesions. In lower zone, healthy.

Uterus small; firm; healthy inside and outside.

Spleen congested.

Kidneys healthy.

Liver soft and congested.

Bacteriological examination discovered streptococci in the peritoneal exudate.

Had a *post*-colpotomy.

Case IV. (Maternity).—Celia C., aged forty, died June 18, 1908. Died of sudden dyspnœa nine days after induced labour.

Fair amount of fluid in abdomen.

Uterus shaggy and inflamed on inner surface.

Kidneys firm; contracted; chronic interstitial nephritis.

Other abdominal organs healthy.

Lungs healthy.

Heart greatly hypertrophied, both on right and left sides. Right side dilated and containing firm *ante-mortem* clot. Mitral valves sclerosed and incompetent.

Case V. (Gynæcological).—Maria R., aged forty-eight, died June 23, 1908, eleven days after operation for removal of retro-peritoneal sarcoma. Two and a half years previously a large retro-peritoneal sarcoma had been removed.

Skin wound septic. Right flank full of broken down septic clot

and debris, with gas intermixed. There is a large necrotic tumour completely embedding the right kidney and adherent to the liver.

Kidney small, with scar at upper face. *Liver* very congested and soft.

Lungs and *heart* healthy.

No secondary growths were found.

Bacteriological examination showed the presence of *Bacillus coli*, with various saprophytic organisms.

Case VI. (Maternity).—Mary C., aged thirty-one, died July 1, 1907, sixteen days after delivery.

Pelvis and lower part of peritoneal cavity filled with pus, inflammation throughout entire peritoneum. Large abscess in right broad ligament, which had burst, discharging into peritoneum.

Spleen and *liver* congested and friable.

Kidneys healthy.

Lungs and *heart* healthy.

Bacteriological examination showed the presence of *Staphylococcus aureus* in the peritoneal cavity.

Case VII.—E. G., aged forty-eight, died 24th October, 1908, the day after performance of Talma's operation.

Peritoneum contained some fluid.

Liver markedly cirrhotic.

Kidneys small, contracted.

Heart small, and atrophied; valves sclerosed.

Lungs healthy.

Curettings and other fragments were examined on fifty-two occasions for diagnostic purposes :—

Table I.—Examination of Curettings and other Fragments for Purposes of Diagnosis.

Endometritis . .	25	Fibroid of uterus . .	3
Endocervicitis . .	1	Granulation tissue .	1
Placental remains .	2	Mastitis . . .	1
Erosion of cervix .	3	Tubercular peritonitis .	1
Squamous carcinoma of cervix . . .	2	Blood-clot, débris, normal tissue, &c. . .	8
Adeno-carcinoma of uterus	5		

Proceeding on the same method of classification as heretofore, the cases of endometritis are divided as follow :—

TABLE II.—CASES OF ENDOMETRITIS.

Hypertrophic or glandular (including cystic, 2)	16	Septic (formerly termed "simple")	3
Interstitial	4	Post-abortive	2

The cases classed as "interstitial" are more numerous than in previous years, being 16 per cent. of the whole, as against 3 per cent. last year and 8 per cent. the year before.

The principal object of examination of curettings is, of course, the discovery of malignant disease of the body of the uterus. In nearly every case the distinction was easy where sufficient of the tissue was submitted. One point is usually enough to decide the question—the regularity of the epithelium. In endometritis and non-malignant conditions generally, even if there be great proliferation and tufting of the epithelium, it is still quite regular in its outline. The basement membrane is preserved, and the cells are regular in size. In adeno-carcinoma, on the contrary, the cells are irregular in size and shape, and their growth tends to transgress the basement membrane.

Tumours and operation specimens were examined in eighty-four cases:—

TABLE III.—EXAMINATION OF TUMOURS AND OPERATION SPECIMENS.

Recurrent cyst in vagina	1	Tubal pregnancy	1
Epithelioma of cervix	9	Ovarian cyst	15
Amputated cervix	1	Dermoid of ovary	3
Carcinoma of body of uterus	2	Abscess of ovary	1
Sarcoma of uterus	1	Carcinoma of ovary	2
Fibro-myoma of uterus	28	Urinary calculus	1
Mucous polypus of uterus	4	Hypernephroma	1
Adeno-myoma of uterus	1	Retro-peritoneal lipo-sarcoma	1
Salpingitis and pyo-salpinx	8	Cholecystitis with gall-stones	1
Tubercular salpingitis	2	Lipoma of back	1

In addition a large number of placentas and ova and other specimens have been examined, chiefly from the Extern Maternity.

The case of recurrent cyst in the vagina is an interesting one. Some months previously an ovarian cyst of small size had been removed by the vaginal route. In October, 1907, the patient returned, when a mass of cystic material was found present in the vault of the vagina. The cysts were visible to the naked eye, and were filled with mucoid material, but it was difficult to obtain good sections as the mass was very necrotic. This is the second case in the year under review where an ovarian cyst showed the power of recurrence. The other case, that of E. C., is described in the Gynæcological Report.

Squamous carcinoma of the cervix was, as is usual, more frequently met than adeno-carcinoma of the body, the numbers being nine and two. Last year, curiously, we had five cases of adeno-carcinoma to four of squamous carcinoma. In neither of the cases of adeno-carcinoma of the body were there fibroids present, nor were there fibroids in any of the cases of squamous carcinoma.

Sarcoma of the uterus is a rare condition. In four years' work at the Rotunda Hospital the present is only the second case encountered. In the previous case the sarcoma developed in a degenerating fibroid. The present specimen answers the typical description of sarcoma of the uterus. It exactly resembles a specimen figured in Cullen's "Cancer of the Uterus." It is a smooth, lobulated growth, translucent in appearance, and consisting of large round cells.

Of the twenty-eight fibroids examined, degenerative changes were noted in eight. In five there was actual sloughing of the tissue, in one there were patches of fatty softening, and in one there were cystic spaces. In one there was a mild degree of "red degeneration," the condition being associated with pregnancy.

The present case of adeno-myoma is the second we have met in four years at the Rotunda. The tumour is one and a half inches in diameter, and set in the wall of the uterus. In structure it closely resembles an ordinary fibro-myoma, but it is permeated by large glands. The epithelium of these latter is quite regular. There were two or three small nodular fibroids

present also. The previous case observed was very similar. More frequently, however, the growth is general, and affects a considerable extent of the uterine wall. It is probable that adeno-myoma would be recognised more frequently if a careful microscopic examination were made of all seeming fibro-myomata.

Two of the cases of dermoid presented points of interest. One contained several teeth, a condition not as common as is supposed. In the other the disease was bilateral, a condition probably very rare. It will be remembered that last year Dr. Andrew Horne exhibited to the Section of Obstetrics two dermoids from one patient.

Two cases of carcinoma of the ovary occurred, both being, as far as could be ascertained, instances of primary disease. This makes a total of thirteen cases in the practice of the Rotunda Hospital in the past four years. In one of this year's cases the growth was unilateral, and forms a mass 6 inches by 4 by 3. In the other it was bilateral, and formed two large masses, each as large as a football. In this case the growth was first noticed a few months after marriage, and increased rapidly in size. It was mistaken for pregnancy, and it was only when labour did not occur at the expected period that the patient sought advice. In this case there were several small fibroids in the uterus.

The hypernephroma was a large sac of pus, with a thick fibrous wall. The wall, on section, showed groups of epithelial cells in irregular arrangement; no normal kidney was found.

The retro-peritoneal lipo-sarcoma was in a patient who had an enormous retro-peritoneal sarcoma, weighing 13 lbs., removed in October, 1905. The recurrent tumour differed from the primary in having much less fat present. In fact, in examining the primary tumour, we had some hesitation in declaring it malignant, the fat being very plentiful. It appeared to be completely encapsuled, shelling easily out of its bed. When the growth recurred it completely embedded the right kidney, permeated behind the liver, and was adherent to the great vessels. It was soft, and almost diffluent, and complete removal was impossible.

The uterine lochia was examined bacteriologically in thirty-six morbid cases :—

TABLE IV.—BACTERIOLOGICAL EXAMINATION OF THE UTERINE LOCHIA IN THIRTY-SIX MORBID CASES, SHOWING THE ORGANISMS OBSERVED OR ISOLATED :—

Diplococcus a.	12	Bacillus coli	1
,, pneumoniæ	12	Unrecognised bacilli (probably saprophytes)	6
Staphylococci	6	Saprophytes	2
Streptococcus	1	Negative	13
Gonococcus	1		

It is to be noticed that the diplococcus previously described is still one of those most frequently associated with puerperal sepsis, while the pneumococcus is also very frequently present. In many cases the two were associated. The case in which streptococci were found was a severe one, ending fatally. The organisms were found in the blood some days before death. For the first time gonococcus finds a place in our tables of results. Other observers report it comparatively frequently, but I believe there has been confusion between it and *Diplococcus a.* The latter is distinguished by its ready growth on agar plates and by the fact that it is rarely intracellular. Neither has it the typical shape of the gonococcus.

ART. XI.—*A Case of Retro-peritoneal Sarcoma.* By G. JAMESON JOHNSTON, M.D., F.R.C.S. ; Surgeon, Royal City of Dublin Hospital.

J. R., aged twenty-one, a ship engineer, was admitted to the Royal City of Dublin Hospital on December 23, 1908, complaining of a swelling in the left side of his abdomen which, as a rule, caused him no pain or discomfort, but occasionally was the seat of a pain of a dull constricting nature, lasting about six hours.

His father, mother, three brothers and three sisters are alive and well.

Patient states that he has always been healthy and free from sickness until his present illness, with the exception of measles when a child. He served an apprenticeship for five years, and for ten months previous to admission was acting as engineer on

board ship. His work was divided into four-hourly periods—four hours below deck and four above. He is a total abstainer, and there is no history of specific disease.

Patient dates his trouble from five weeks previous to his coming into hospital, and says that the swelling came on suddenly when in bed, causing no pain, but only a sensation of weight and stiffness, which was increased by lying on his right side. He had no medical advice until December 21, when he saw Dr. Gill, of Dundalk, who sent him to me. He is not particularly intelligent, and it has been difficult to get a satisfactory history. He says, however, that he has lost some flesh, has occasional pain in the back, and vomited once before admission. His mother, however, states that last June she noticed him getting thinner, and also that he commenced to refuse porridge for his breakfast, though he had previously been very fond of it; since then he has preferred milk only.

On admission, he was emaciated and somewhat anæmic. There was a distinct rounded swelling on the left side of the abdomen, half-way between the costal margin and the ilium; it became more pronounced when the patient was turned over on his right side. The upper half of his abdomen seemed fixed and not to move during respiration; there was also some fullness in the epigastric region; the lower half of his abdomen was considerably sunk, and the superficial veins were evident, though not distended sufficiently to suggest obstruction. On palpation, the swelling felt rounded, smooth, defined and elastic; it was not tender, and no fluctuation could be obtained; it was somewhat larger than the traditional Tangerine orange; it did not move on respiration, and was apparently fixed to the posterior abdominal wall; one's hand could easily be inserted above it, and occasionally the edge of the spleen could be felt distinct from the tumour. A continuation of the mass was thought to extend over to the right, but palpation was rendered impossible by the fact that the upper halves of both recti were continuously kept rigid, the lower halves being quite relaxed. The kidneys could not be palpated on either side. The liver dulness seemed normal. As a result of repeated examinations an area of dulness, triangular in shape, with the apex at the swelling and its base in the nipple line, from just below the costal margin to the level of the umbilicus, could be made out. The stomach note could be recognised between the thoracic outlet and the dull area, but its distribution varied a great deal; the same remark applies to the lower edge, which

varied with the distention of the colon, which viscus was apparently in front of the swelling. The variation of the stomach area, a certain amount of flatulence and occasional presence of succussion, led to the suspicion of dilated stomach.

Since admission to hospital the patient has complained on several occasions of pain in the lumbar and sacral regions, lasting for some hours, and then disappearing completely. He states positively that the swelling has remained the same size since it appeared first, and no change in its size has been observed in hospital. He has vomited six times since his admission, and examinations of the gastric contents have shown the presence of lactic acid, but no HCl, notwithstanding repeated examinations with Gunsberg's re-agent, and other tests.

With the object of discovering if the pancreas was involved, his motions, which have been regular, were examined, and showed no indications of digestive disturbances.

He passed on an average 741 cc. of urine in the twenty-four hours; it was acid, specific gravity 1028; contained a mere trace of albumen; no casts or any other abnormal constituents.

The temperature has been normal all through.

On January 13 I examined the patient under an anæsthetic. The prominent tumour was found to be continuous with a large mass, which had a very ill-defined upper and lower limit, but had a distinct border towards the right in the nipple line as far down as the level of the umbilicus. The mass felt a continuous one; no detached lumps could be felt.

On January 14 I opened the abdomen in the middle line above the umbilicus, and found a large, firm, fairly regular tumour occupying the centre of the abdomen in front of the spine, and approximately triangular in shape, covering entirely the left kidney and pancreas, and incompletely covering the right kidney. The duodenum was carried forward, and with it the duodeno-jejunal flexure and root of the mesentery. The greater portion of the tumour was concentrated here, but it was quite impossible to locate the place of origin. The lower left-hand angle was distinctly rounded and much softer than the rest, and suggested a hæmorrhage into this part of the tumour. The right kidney, liver, stomach, spleen and intestines were quite normal. There were no enlarged glands nor metastases in the liver or elsewhere that I could make out. There was no ascites. It was obvious that any attempt at removal was unjustifiable.

The diagnosis arrived at at the time of operation was that of retro-peritoneal sarcoma, and this diagnosis was later confirmed, at autopsy, as the patient only lived for three months from the date of operation. At the *post-mortem* examination the growth was found to be mainly situated at the root of the mesentery, and pushing forward the viscera, as already described. No secondary growths nor enlarged glands were present. Microscopically it presented the characteristics of round-celled sarcoma.

Comments.—As regards the frequency of these growths accounts differ. Treves says they are not uncommon ; Bland-Sutton says they are extremely rare. No specimen seems to have been exhibited at the Pathological or Medical Society of London prior to 1895. They are said to be rare in children. Steele, who has collected ninety-six cases, finds that they occur in the first, fourth and tenth years. He found one case under a year old and another in a patient eighty years of age. Arnstein has recorded a case in a female aged four. In an analysis of twenty cases of solid retro-peritoneal tumours, Rogowski found sarcomatous tissue in all. Both sexes seem equally affected.

Origin.—As to their origin, they are said to arise in any of the retro-peritoneal tissues, fasciæ, retro-peritoneal glands, mesenteric glands, sheaths of vessels and periostium of the vertebræ. Köenig regards the slow growing forms as fascial in origin and the rapidly growing as arising in the glands.

Varieties.—The various types of sarcomata are met with, but they are generally spindle-celled, encapsuled, large, firm and lobulated. Bland-Sutton says : Very large spindle-celled sarcomata are occasionally found in the retro-peritoneal tissue ; they are nearly always globular and football like ; sometimes the kidney occupies a hollow in the tumour ; they are the least malignant of sarcomata, and may reach a weight of 30 lbs.

Symptoms and Diagnosis.—In the early stages, when it is most important to recognise them, as there is then some possibility of removing them without damaging the circulation of the intestines, the diagnosis is very difficult. The insidious onset, the absence of symptoms directly referable to the liver, pancreas or intestines ; the presence of obscure gastric

symptoms without any evident cause ; the presence of abdominal pain, though this varies from the merest discomfort to acute colicky pains ; occasional pain in the back ; the presence of resistance and tenderness in the deep abdomen ; pushing forward of the colon ; diarrhœa and constipation both have been noticed ; in the case under consideration there was neither ; the loss of weight, strength, appetite and colour ; the gradual progress from bad to worse of the general condition of the patient. A combination such as these ought to lead one to suspect a retro-peritoneal growth. An irregular temperature has been noticed, though this did not occur in my case. What the significance of the absence of HCl in the gastric contents has in relation to abdominal sarcomata I am not in a position to state.

ART. XII.—*Report on an Outbreak of Enteric Fever at Clontarf* (Dublin County Borough). By SURGEON-COLONEL D. EDGAR FLINN, D.P.H., F.R.C.S., Medical Inspector, Local Government Board, Ireland.

IN the autumn of last year a local epidemic of enteric fever occurred at Clontarf, a residential area lying to the north-east of Dublin and recently brought within the City Boundary. The initial notification of the disease was received at the Public Health Office of the Corporation of Dublin on the 28th September, but the real commencement of the outbreak dates from about a fortnight previously, as cases were attended by local medical practitioners on the 15th, 17th, 18th, 19th, and 21st (two) September.

The following is a monthly record of the cases notified from Clontarf to the Sanitary Authority :—

September	- -	7
October	- -	119
November	- -	7
December	- -	9
Total	-	142

At an early stage in the outbreak it was noted by the District Medical Officer of Health, Dr. O'Donoghue, that all the infected houses were supplied with milk from the same source, a dairy in Vernon Avenue, and investigations were immediately instituted with a view to ascertaining whether any cause of infection could be traced on or in connection with the dairy premises. The dairy was visited by Sir Charles Cameron, Medical Superintendent Officer of Health, and by the Veterinary Inspector of the Corporation of Dublin, Mr. Watson, but no evidence of recent illness either in the dairyman's household or among his employees could be obtained, while the cows were found to be in good health, and the dairy premises and cowsheds were kept in a clean condition. Objection, however, was taken to the proximity of a water closet, which was defective, to a room used as a milk store, and also to the absence of interceptor or ventilator on the drain connected with the dairy. Notices for the abatement of nuisances were at once served and duly complied with.

Further precautionary measures were taken by obtaining samples of milk both from the dairy and from customers for bacteriological examination, which, however, gave a negative result, and by testing specimens of the urine of the dairy employees—with negative results also. On the 1st October a public warning was inserted in the Press by Sir Charles Cameron, advising householders to boil milk before using it. I have no doubt but that this note of warning may have had a good effect with the majority of householders in the affected area, but in some cases that came to my knowledge the warning was not heeded until too late, and several houses became infected in consequence of neglecting to carry out this precaution, and thus prolonged the continuance of the outbreak.

Cases, however, continued to be reported without cessation, and nearly all had one common feature in the use of milk from the dairy in Vernon Avenue, though in a few instances the relationship with this dairy was at first obscured by the fact that the milk was procured indirectly through an intermediate vendor. Taking the entire outbreak, about 130 cases

had a direct connection with the Vernon Avenue dairy. The whole number of invaded houses was 82, of which 79 were supplied with milk from the one dairy, while the other three were partially so supplied. It was ascertained that this dairy served 157 houses in the locality, in 79 of which enteric fever appeared, representing an incidence rate of 50 per cent.; there were 28 other dairies supplying milk in the district, the customers of which were practically immune from attack.

As soon as the circumstances began to point unmistakably to the Vernon Avenue dairy as the centre of infection, the Local Government Board suggested to the Public Health Committee the advisability of proceeding to stop the milk supply from this source under the powers conferred by section 4 of the Infectious Disease Prevention Act, 1890. The Corporation consulted their Law Adviser, who expressed the opinion that, as no evidence of infection or probability of infection had been disclosed on the inspection of the dairy by the Medical Superintendent Officer of Health, the consequent action authorised by the section could not be taken. The presumptive evidence having in the meantime gained cumulative strength, the Local Government Board urged the Corporation to obtain Senior Counsel's opinion. This was done, but with the result of confirming the view taken by the Law Adviser of the Corporation. This opinion appears to me to reveal a grave defect in the statutory provision enabling local authorities to prohibit the sale of milk causing or likely to cause infectious disease, as I can scarcely conceive a case in which the relation of cause and effect between the consumption of milk from one particular source and the incidence of enteric fever could be more clearly demonstrated. The obvious intention of the section is to prevent the spread of infectious disease by the medium of milk, and it is regrettable, and it becomes a matter of serious moment, if the administration of this section is to be surrounded with technical difficulties and, as is suggested, is likely to become "practically a dead letter." Had it been possible to put this section into operation at the early stage of the outbreak, as was suggested in the Board's letter of October 6th, 1908, the number of

cases would have at once diminished, and the outbreak would have speedily been placed under control and have had a much earlier termination.

I append a table illustrating the age and sex distribution of the cases, and based on particulars with which Sir Charles Cameron was good enough to furnish me during the progress of the outbreak.

Table showing the Age and Sex distribution of the cases notified from September 28th to December 24th, 1908.

	Total	1–5 years	5–10 years	10–20 years	20–30 years	Over 30 years	Age not stated
Males ...	60	9	13	16	10	9	3
Females ...	82	9	13	17	15	27	1

In view of the facts which I have already related there can, I consider, be no doubt that the cause of the spread of the disease was a consumption of milk distributed from the Vernon Avenue dairy, but the question remains to be considered, "How did the milk become infected?"

Five possible solutions of this problem have been suggested, and will now be in turn stated and examined.

(1) Was one or more of the milking staff a "typhoid carrier"?

At this stage it may be explained that the dairy herd consisted of 58 cows, of which 13 were kept at the premises in Vernon Avenue, while the remainder were pastured on fields at a distance. The bulk of the milk supply was obtained and delivered direct to the consumer from the cows in the fields, but milk was also distributed from the dairy. The cases of enteric fever occurred among persons supplied from both these sources, so that it may be assumed that there was a common infection.

Three milkers were in the habit of regularly milking the herd—two of these milkers milked the cows at the pasture lands as well as at the dairy, the third man only milked the

cows at the pasture fields, but, when distributing milk, called to the dairy each day to replenish his supply. The second distributor of milk took his supply direct from the pasture fields to the consumers, but, as stated before, he assisted in the milking of the cows at the dairy. It will thus be seen that both milkers, who were also the distributors of the milk, were in continuous and daily touch with the dairy herd and premises as well as with the herd at the pasture fields.

It will be of interest to record the distribution of the milk supply from the dairy by the two men who also assisted in the milking of the herd. In the western end of Clontarf, where the rate of attack was greatest, A. K. distributed milk to the following localities :—

Hollybrook Road,
Castle Avenue,
Victoria Road,
Howth Road,
Haddon Road,
St. Lawrence Road,
Warrenpoint, &c.

J. Y. distributed milk in the eastern or Dollymount end of the district, including the following places :—

Conquer Hill,
St. Joseph's Square,
Tramway Terrace,
Victoria Terrace,
Seaview Avenue,
Vernon Avenue, &c.

The incidence of the disease was not so great in this portion of the district, the large number of cases occurring in the west end, and in good class residential localities.

Careful inquiries failed to elicit that any member of the dairy owner's family or of the employees had suffered from enteric fever—neither had any of their relatives been ill from the disease, although on the first occasion of my visiting the pasture fields I noticed that one of the milkers looked rather ill and had a foul tongue. I asked Dr. O'Donoghue to visit and examine this man, which he did, and he found that the

temperature was subnormal (97° F.). This man at a later stage was transferred to other employment.

At my suggestion the District Medical Officer (Dr. O'Donoghue) made a thorough search of the Medical Relief Register for a period extending over several years to ascertain whether any of the persons employed at the dairy had at any time suffered from enteric fever. It was found that not one of them had suffered from the disease.

Specimens of the urine of the three milkers were submitted by Sir Charles Cameron to Professor McWeeney for bacteriological examination, but the result of the examination was negative. Subsequent to this I endeavoured, through the medium of Dr. O'Donoghue (who, from his local knowledge, afforded me considerable assistance during my investigations) to procure specimens of fæces from these workers, but these efforts were not successful, as were also the efforts made in the same direction by Sir Charles Cameron.

Professor McWeeney, in the course of the outbreak, examined specimens of blood taken from the dairy owner and his family, as well as from the milkers. The result of this examination was not made known (as it was undertaken in the interests of the dairy owner), but soon after it had taken place three of the men who were engaged in milking and the distribution of the milk were transferred to another sphere of employment.

Assuming that the bacteriological examinations of the blood were of a nature favourable to the "carrier" theory, it must on the other hand be noted that the examination of the urinary excretions was of a negative character.

I find it difficult to accept the conclusion that any of the employees was a "carrier." No history of a past attack of enteric fever could be procured, the bacteriological evidence, so far as at present known, was negative, while the same men had for a long time previously been employed in the distribution of milk without any ill effects to the consumer. The only point in support of the "carrier" hypothesis is the fact of three of the milkers being superseded after the examination conducted by Professor McWeeney.

Since the termination of the outbreak these men, I am

informed, have resumed their duties as milkers and in the distribution of milk. If one or more of these men were "carriers," it will be interesting to note whether the theory recently enunciated—that "once a carrier always a carrier"—will obtain confirmation in this instance.

(2) Were the emanations from the refuse deposited at the Fairview sloblands responsible?

No doubt much objectionable vegetable and other refuse had been deposited there for some time previous to the outbreak. It was, however, clearly established from the beginning that the emanations from the sloblands had no connection with the outbreak, as no case of fever occurred at Fairview or in its immediate vicinity.

Cases of Enteric Fever notified from the Fairview District for the past three years.

	1906	1907	1908	Total
Fairview - -	nil	1	nil	1
North Strand Road -	1	3	nil	4
Philipsburgh Avenue -	nil	1	1	2
Windsor Avenue -	nil	nil	1	1
				8

(3) Were the germs of infection spread in the course of the main drainage operations?

Works in connection with the laying of the new sewerage system of Clontarf were in progress during last summer and autumn, and no doubt gave rise to local inconvenience and annoyance. But so far as the general incidence of the outbreak was concerned, the source of infection could not be ascribed to this cause, seeing that the attack was almost exclusively confined to the customers of a particular dairy. The possible influence of the drainage operations must thus be narrowed down to the contamination of this one source of milk supply. I have, however, ascertained that the work of laying the new sewer in the vicinity of the dairy premises was only commenced

on the 15th September, which, by a strange coincidence, was the day on which the earliest case in the series was first medically attended. No doubt this case had been incubating the disease for a week or more. Thus the commencement of the outbreak must be dated from approximately the first week in September, as in addition to the case mentioned above, there were several other cases apparently in the stage of incubation at this time.

(4) Was defective drainage the medium of infection ?

In the course of my inquiries I learned of the existence of illness at No. 5 St. Joseph's Square—a house which adjoined the dairy premises. On visiting this house on the 30th October I saw a woman whose delicate appearance led me to ask whether she had been recently ill. She replied that she had been confined to bed in the month of August, and that her medical attendant had stated that she had had an attack of typhoid fever. This case was not notified to the Public Health Authorities. The medical practitioner, however, subsequently explained that the case was an obscure one, and that many of the typical symptoms of enteric fever were absent.

I am of opinion that this case was one of enteric fever, and that it had an important bearing on the main outbreak. The patient was ill in bed from the 9th August until the 7th September, and was without a skilled nurse. The drain from No. 5 St. Joseph's Square communicated with a sewer which was found to have open joints and no concrete foundation, and into which the drainage of the dairy premises also discharged, and, as I have already mentioned, the drainage arrangements of the latter premises were faulty.

Having regard to the fact that the dejecta from the case of enteric fever that occurred at St. Joseph's Square were for four weeks or more daily passing down this defective sewer, the possibility of the milk supply becoming infected from this cause cannot well be excluded.

It is much to be regretted that the circumstances and history of the case of enteric fever which occurred at 5 St. Joseph's Square were not known at the commencement of the outbreak ;

for obvious reasons this knowledge would have been useful and of undoubted advantage.

(5) Was infection introduced from communication with infected households ?

In addition to the unnotified case at 5 St. Joseph's Square, there were two other cases notified from this square in the earlier stage of the outbreak. Both these cases were removed to hospital, but not for a week or so after they had contracted the disease, and during the period of their treatment at home milk was being fetched twice each day from the dairy in Vernon Avenue.

From the commencement of the outbreak several infected houses in the vicinity of the dairy were supplied with milk direct from the dairy, and messengers were sent daily from the infected houses to the dairy in Vernon Avenue for milk. In two cases jugs were carried from the *patients' bedrooms* each day direct to the dairy, where they were filled with milk and then brought back to the sick room. There was thus a close and frequent intercourse between the inmates of the dairy and several infected houses. The possibilities of infection under such circumstances cannot be disregarded ; further, the daily communication between the house 5 St. Joseph's Square and the dairy for over four weeks, and just prior to the commencement of the outbreak, possesses great significance. In this case the person nursing the patient (an unskilled nurse) went herself each day to the dairy for milk for the patient's use. This person also was daily engaged in removing and dealing with the dejecta of an infected patient, and it would be only by the most scrupulous care and cleanliness that infection under such circumstances could be avoided. It has further been established that during the early part of the outbreak messengers from infected houses in Rutland Place, Vernon Avenue, Victoria Terrace, Brian Boru Street, and St. Joseph's Square went direct to the dairy for milk each day.

It will be seen that the evidence bearing on the manner in which the milk became infected is far from conclusive, but I incline to the view that the unreported case in No. 5 St.

Joseph's Square was the original source of the outbreak, there being communication between the two houses by means of untrapped drains, as well as daily intercourse through the visits of the patient's attendant at the dairy. Moreover, the period of this patient's illness coincides fairly closely with the commencement of the outbreak. The only other hypothesis which has any appearance of probability is that there was a typhoid-carrier among the dairy staff, but this explanation is based solely on an unconfirmed surmise, and does not in any way account for the explosive character of the outbreak in the middle of September, 1908.

TREATMENT OF PRURITUS ANI, WITH A CONSIDERATION OF ITS PATHOLOGY AND ÆTIOLOGY.

A PAPER, under this title, was read before the American Proctologic Society last June by William M. Beach, A.M., M.D., of Pittsburgh, Penna. The following conclusions were drawn by the writer :— (1) Pruritus ani occurs in mild and severe forms ; mostly in middle life ; the mild type with simple pruritus, the severe type with marked eczema and skin changes. (2) Certain aberrations in general metabolism or in adjacent structures are simply incidental, and should be considered as complications. (3) Intra-rectal growths, as hæmorrhoids, adenomas, &c., or the presence of parasites, are contributory. (4) The distinct pathogenesis of pruritus ani consists of single or multiple burrowings from the anal pockets, emitting a serous or sero-purulent substance. These sinuses may be complete or blind, and their presence is always accompanied by proctitis, and frequently by cryptitis, with small ulcers at the ano-rectal line. (5) These sinuses, when complete, are the sequelæ to an abscess history, but the origin of the blind recesses is in doubt, and yet they are not unlikely due to an infection by the colon bacillus. (6) The treatment is surgical for the purpose of obliterating the sinuses, correcting a rigid sphincter when necessary, and curing the proctitis and ulceration. (7) Gastro-intestinal and general metabolic disturbances must be met by rational measures.

PART II.

REVIEWS AND BIBLIOGRAPHICAL NOTICES.

A System of Medicine. Edited by WILLIAM OSLER, M.D., F.R.S., Regius Professor of Medicine, Oxford University; and by THOMAS M'CRAE, M.D., F.R.C.P., Associate Professor of Medicine, Johns Hopkins University, Baltimore. Vol. VI. London: Henry Frowde; Hodder & Stoughton. 1909.

THIS volume of "Osler's System," as it is now familiarly known, is divided into six parts, which deal respectively with—(1) Diseases of the Urinary System; (2) Diseases of the Ductless Glands; (3) Diseases of Obscure Causation; (4) Diseases of the Muscles; (5) Vasomotor and Trophic Disorders; and (6) the Medical Aspects of Life Insurance.

The first part naturally occupies about one-half of the entire number of pages. The subject is introduced by Dr. John M'Crae, who writes a concise and thoughtful chapter on the normal and pathological physiology of the kidney. This is followed by a short chapter, by the same writer, on malformations of and circulatory disturbances of the kidney. Dr. Garrod contributes the two succeeding chapters on anomalies or urinary excretion and on uræmia. Both these chapters are models of careful and accurate writing, and constitute admirable summaries of all that is known regarding the author's subject-matter. In dealing with uræmia, we are glad to notice the stress laid on the cardiac and vasomotor origin of most cases of renal dyspnœa; while in the section on treatment the hint as to the type of uræmia which may be relieved by vivisection is most useful, and we believe thoroughly sound. We also notice with pleasure that the writer only devotes about three pages to the "Theories of Uræmia," a practice which might be more extensively followed by other writers when dealing with subjects to which the concluding remark of Dr. Garrod is applicable. The remark to which

we refer may be quoted—"Meanwhile the causes of uræmia remain unknown." The chapters on Bright's disease proper are written by Dr. Herrick. He does not appear to us to recognise or admit the frequency with which acute nephritis is followed by or passes into the chronic parenchymatous form, but this is, of course, a matter of opinion. His commonsense advice regarding the allowance of an adequate proteid diet to patients suffering from chronic interstitial nephritis, and his scepticism regarding the value of decapsulation of the kidneys for this last-named disease express points of practice which are happily followed by most physicians of the present day, but on which dogmatic and authoritative statements are still necessary.

In Part II. the diseases of the thyroid gland, of the suprarenal gland, and of the pituitary gland are dealt with. In discussing the surgical treatment of acromegaly a little more information regarding the risks incident to operation and the prognosis after recovery from the immediate effects might have been given. The writer gives references indeed to the literature, but this is hardly enough to satisfy a reader who turns to the present work when endeavouring to make up his mind as to what advice he should give to an acromegalic suffering from severe symptoms of intracranial pressure. The chapter on exophthalmic goître is complete; the sections in it which deal with the pathology and treatment of the disease are respectively scientifically illuminating and useful; the section on surgical treatment should, we think, only be read by surgeons after they have mastered the first sentence in the paragraph on prognosis.

In Part III. the best chapter is, in our opinion, that on Hodgkins' Disease. The differential diagnosis is in particular admirably dealt with, and the real difficulties that are met with in practice are described in a manner we have not met with elsewhere. No mention is made, however, of the possibility of multiple lympho-sarcomata developing in glands originally the site of the characteristic pathological change of Hodgkins' disease.

Part IV. contains good descriptions of Thomson's disease and of myasthenia gravis, while in Part V. we find descriptions of Raynaud's disease of angio-neurotic œdema, and of

erythromelalgia by Professor Osler. Two coloured plates serve to illustrate the article on erythromelalgia.

Not the least useful part of the volume is the concluding chapter on life insurance. It is well worth the study of all who are called upon to make examinations of candidates for insurance, and as an exposition of well-considered opinions to which reference can readily be made it constitutes a standard which should enable the reader to form a just estimate regarding his report in any doubtful case.

Myomata of the Uterus. By HOWARD KELLY, M.D., Professor of Gynæcology, Johns Hopkins Univ., and THOS. CULLEN, M.D., Associate of Gynæcology, Johns Hopkins Univ. W. B. Saunders Co. 1909.

IT has been remarked by some critics that an excess of medical, and especially gynæcological, text-books is being produced, but no one can deny that "Myomata of the Uterus," which Kelly and Cullen have given to us, fills a distinct want. Americans seem to have an innate facility for writing a book, and the labour which must have been expended upon the production of this work was evidently prodigious. Not only are the cases in which recovery occurred chronicled, but deaths are also reported, with an explanation of the cause, as found by the writers, together with notes as to what other treatment might have been adopted in order to save the patient.

In the preface, Dr. Cullen states that "the first idea was to produce a book on myomata in general, but when the subject was fully investigated it was found that his own, together with Dr. Kelly's, efforts would suffice for a volume;" and there is no doubt that the personal study of these surgeons, as set forth in this work, should commend itself to the profession. The plan adopted of reporting every case, with the chief points in large print, allows one to see at a glance exactly what the case is. The mortality from 1889 to 1906 was between 5 and 6 per cent., and from 1906 to 1909 less than 1 per cent., thus showing an immense improvement. These figures are all the more remarkable from the fact that the cases embrace not only simple but severe suppurating tumours, some complicated by extra-uterine conditions.

The book commences with a consideration of the different varieties of myoma. Special note is taken of myoma complicated by omental adhesions—"We always make it a point to tie the omental vessels twice in the proximal and once in the distal or tumour side. These vessels are so delicate, and tear so easily, that we invariably tie, instead of clamping and then tying."

A note is given at the conclusion of the report of each case of the highest post-operative temperature, and the day on which it occurred. The danger of including the ureter in the removal of tumours deep down in the pelvis is pointed out, bisection of the uterus being advised in these cases.

The symptoms of suppurating uterine myomata are given shortly but well, and operation is advised as soon as possible. We should have been more pleased if the writers had discussed in more detail whether vaginal or abdominal operation is to be preferred for this condition.

There are only two pages of the book given to adenomyoma, the explanation of this being that the subject attained such proportions that a separate volume was found necessary to give the matter full consideration.

One hundred pages, on the contrary, are devoted to myosarcoma, a subject which is well thrashed out, and which demonstrates clearly the necessity of a thorough pathological examination of every tumour removed. Amongst the many cases recorded the following is certainly most interesting:—"Supravaginal hysterectomy, supposedly for simple interstitial and subperitoneal myomata. Two years later, sudden collapse, due to hæmorrhage from a sarcoma developing from the cervical stump. Re-examination of the original tumour showed typical sarcomatous transformation of the myoma. Later, intestinal obstruction. Artificial anus with complete control. Death eight months after the second operation."

A great amount of space is devoted to carcinoma of the uterus associated with myoma, special note being taken of epithelioma of the cervix, together with myoma of the body; several cases of this condition are reported, and it is observed that "the malignant growth in the cervix might readily be overlooked." There is also a special chapter devoted to

adenocarcinoma of the body in conjunction with myoma, together with many fine illustrations.

The pathological condition of the endometrium in connection with myoma is described in what seems to us to be too great an extent.

The condition of the tubes, ovaries, ureter, bladder, &c., are fully dealt with, a very interesting chapter being that on the rectal findings.

The very complete autopsies which seem to be in vogue at the Johns Hopkins Hospital commend themselves. Many practitioners are content with an examination of the uterus. Here we find details of secondary involvement in the mucous membrane of the bladder, and even in the heart.

The remainder of the book deals with the symptoms and diagnosis of myoma, as well as the operations. The symptoms having been explained, the authors state that in describing differential diagnosis they will only deal with their own cases, and these certainly embrace most conditions that the ordinary surgeon will encounter. The diagnosis from pregnancy is explicit, the paragraphs concerning the difficulty in diagnosis, even when the abdomen is opened, especially pleasing us. Later a chapter is devoted to Pregnancy and Myomata.

The operation of oöphorectomy for myoma is briefly discussed; the operation is not advocated. Conservative surgery is practised wherever possible, and the authors have already performed 296 abdominal myomectomies. The exact indications and contraindications are given, the operation is well described and illustrated. Round needles are used for sewing up the uterus after myomectomy, thus diminishing the risk of hæmorrhage. Suspension of the uterus is recommended to lessen the chance of omental adhesions; catgut is used for the suspension to prevent the union from being too firm. Where myomectomy cannot be performed, it is advised to leave a portion of the fundus if possible. The danger of rupture of the uterus in the removal of submucous myomata is mentioned. The authors do not advise either local treatment by probes or by means of electricity.

The book is splendidly illustrated. No pains or expense

seem to have been spared. The different varieties of myoma, the various degenerations, the operations are all minutely represented. There are in all 388 illustrations, 19 of which are coloured. The book is also well bound, well printed on good paper. It contains an immense amount of useful information for the general practitioner, and it should certainly not be absent from the library of any gynæcological surgeon.

Graphic Methods in Heart Disease. By John Hay, M.D., M.R.C.P.; Assistant Physician, Liverpool Royal Infirmary. London: Henry Frowde; Hodder & Stoughton. 1909.

This addition to the Oxford Medical Publications may be cordially recommended. One might almost regard it as an introduction to Mackenzie's work on "Diseases of the Heart," save that it is complete in itself. It gives in short space and in readily understandable form all the essentials requisite to a study of heart disease by graphic methods, and in consequence it should supply a want that must have been felt by many practitioners who have been puzzled and possibly bored by the elaborate communications on the subject that have become so frequent of late years in the medical periodicals. The present book is extremely clear, and is not overburdened with theory. It constitutes a key to the subject which may be read in a few hours and mastered in a few months. Whether the practical importance of these up-to-date methods is sufficiently great to repay the student for his trouble is for each practitioner to decide for himself; but as no one can afford to be out of the fashion, in these days of scanty employment and many scientific meetings, we strongly advise every physician to purchase this book, and when he has read it to make a further plunge and obtain Mackenzie's masterly treatise already referred to. The medical societies to which the reader belongs will probably gain, even if his patients do not, but he himself will be the chief gainer, for he will find opened to him one of the most fascinating chapters in the whole of medical study, and one which will raise his thoughts above the ordinary routine of hearts and lungs, and give him a more intimate knowledge of the way in which organs perform their function, or rather of the way in which it is supposed by some

that they do so, than has ever before entered within the compass of his philosophy. If from reading he betakes himself to practice the methods, he will, moreover, shortly find himself provided with a series of tracings which will tax his ingenuity in deciphering, and which may lead him to devise new theories, or, if he be bold, to throw doubt upon those that already exist.

To revert to the volume before us, we have nothing but praise for its manner of exposition. The tracings depicted are admirably selected, illuminatingly illustrative, and one hundred and twenty-eight in number.

Pye's Surgical Handicraft. A Manual of Surgical Manipulations, Minor Surgery and other Matters connected with the Work of House Surgeons and Surgical Dressers. Fifth Edition, revised and largely rewritten. By W. H. CLAYTON-GREENE, B.A., M.B., B.C. (Cantab.), F.R.C.S. Eng.; Surgeon in Charge of Out-Patients, St. Mary's Hospital; Lecturer on Anatomy in the Medical School. With 343 Illustrations and Plates newly drawn for this edition. Bristol: John Wright & Sons, Ltd. 1909. Pp xvi + 592.

THIS is a well-known manual which has reached its fifth edition. Since its first appearance in 1884 surgery has seen many changes, but the edition before us gives evidence of having been brought up to date. The work is one which, in previous editions, has been favourably reviewed in the pages of this journal, and it is merely necessary for us to draw attention to the appearance of a new edition. Naturally there are points in the treatment of some conditions on which different men have different views, but such are not really blemishes in the book before us, as every surgeon is entitled to his opinions so long as they do not lead to disaster. Personally we would not advise carbolic applications in 2–5 per cent. to burns, as we should fear the production thereby of carbolic acid poisoning. Again, in the treatment of carbolic acid poisoning, we think by far the best antidote has been omitted, and that is alcohol. Alcohol in some form or other can be obtained in most places at once, and it is a well-known fact that when alcohol is applied to any surface which has been touched with carbolic acid the further action of the acid is

arrested, and the tissue which was left white by the acid resumes its normal appearance. We can personally testify to the efficacy of the treatment of carbolic acid poisoning, whether drunk by accident or design, by the immediate administration of alcohol in any form to drink, after which a soft tube is passed and the stomach washed out with alcohol and water, a few ounces of the mixture of alcohol and water being left in the stomach. This effect of alcohol locally on tissue touched by carbolic acid has been known for many years, and the treatment of carbolic acid poisoning as above outlined has been satisfactorily carried out by us for many years past, and has been taught by us for over ten years.

We can cordially commend the book to any student of medicine.

Notes and Thoughts from Practice. By W. J. Tyson, M.D., Hon. Physician, Victoria Hospital, Folkestone. London: John Bale, Sons & Danielsson, Ltd. 1909. 8vo. Pp. 95.

Dr. Tyson has collected in this small volume various stray thoughts and conclusions arrived at in the course of some twenty years' practice. There is not, we think, anything very new or epoch-making in the results, but the clinical experiences of a busy physician are generally interesting, and to this general rule the work of Dr. Tyson is no exception. Perhaps one of the most interesting papers is that on "Ophthalmic Notes in Medical Practice." A sound general knowledge of the diagnosis and treatment of the commoner forms of eye diseases is of the greatest importance to every general practitioner, yet the study of the subject is becoming more and more exclusively relegated to the specialist. Dr. Tyson is inclined to blame the teaching of the student in the schools for this, since the tendency is to devote too much attention to elaborate operations and obscure diseases, the knowledge of which will be of little, if any, use to a man in general practice. How few men when placed on the medical register are competent to detect, measure and treat simple errors of refraction? Such knowledge would, however, be of much more value to the general practitioner than the theoretical knowledge as to the value of the various methods of operating for cataract.

In the last paper in the book Dr. Tyson, not satisfied with his retrospective summary, has ventured into the more difficult region of prophecy. For the ordinary medical man the prospect seems to him gloomy, but that for the cause seems bright. The great progress of the future seems to lie in preventive medicine, and with the spread of this the work of the ordinary medical man must of necessity be diminished.

Modern Problems in Psychiatry. By Ernest Lugaro. Translated by David Orr, M.D., and R. G. Renis. With a Foreword by T. S. Clouston, M.D., LL.D. Manchester: University Press.

The placing of Lugaro's work before English readers by means of this excellent translation is a work of great utility. The authors, in requesting Dr. Clouston to review the work by his *foreword*, have done much to ensure its being widely read by students of mental science in Great Britain. A foreign work must gain in value when reviewed on its title page by such a well-known authority. Dr. Clouston sets high value upon Lugaro's work, and states that "we Britons need such a clear, logical, and illuminating treatise." With this statement one cannot but find oneself wholly in agreement. The work is full of highly original and theoretical ideas, and should prove of great value as a source of original work and future advancement, but one misses the wealth of clinical facts and suggestions for treatment of insane people found in other treatises by the author's countrymen.

The chapter on practical problems is, however, deserving of all praise, and has placed the present-day difficulties in a most forceful and capable manner before us. We trust that in Ireland this part of the work will be widely read by all of the public lunacy authorities. Nowhere could they find more instructive reading. Lugaro points out to all the iniquity of allowing those with a purely religious training to tend upon the insane—a system which has recently been allowed to be re-established in Ireland to a wholly unwarrantable extent, and against the experiences of Spain and Italy here fearlessly set forth. Here is what he says:—"The priest's view of insanity, on account of his training,

must be diametrically opposed to that held by scientific men, and his dogmatism must be in direct proportion to his sincerity and logical reasoning. The fatal determinism of the disease, the absence of error or of sin on the part of the patient, and the unresponsibility, are conceptions which cannot be assimilated by the minds of the priesthood. The consequences of this are obvious. The tortures and persecutions which were endured for centuries by the insane have always been dictated by religious ideas.

"The worst asylums in existence to-day, those of Belgium and Spain, are governed by priests . . . In the asylum at Cienpagnelos, near Madrid, administered by monks and nuns, there is only one doctor, and he is not an alienist. He must limit his attention to the treatment of pneumonia, enteritis, and any other intercurrent disease, while the priests provide for the treatment of mental aberration by using every process of coercion known to man."

It would seem that in Ireland the authorities are inclined to go one better than those at Madrid, and allow some religiously governed asylums to be managed with no resident medical staff at all.

"In Italy there still exist certain conspicuous instances of the manner in which religious bodies house the insane. In the male division at the present time all the nursing is done by laymen.

"The last monks were recently banished from the asylum of San Seroolo in Venice, and with them the chains and fetters!"

The pictures he has drawn of the condition of the insane under the monks' and nuns' governance should surely be widely known to those responsible for the re-creation of this mediæval method of dealing with the insane of Ireland.

His suggestions for reform are high-minded and practical. "First of all," he says, "the insane must be taken out of the hands of private and public speculators. If it was proposed to commit the ordinary hospitals to the care of a syndicate the suggestion would be met with a chorus of vehement protest, and public opinion would be indignant at such an outrage of the most elementary feelings of humanity. But we find no such protest against the committal of the unfor-

tunate insane to private speculators. . . . In Spain the monks and nuns have sole rights of exploiting the insane; in Belgium the monks govern and administrate the male asylums; in Italy there are still asylums owned by lay but private managers, to which the provinces send insane. In institutions of this type everything is permissible; the supervision by the public counts for nothing, and that by the officials is a mere farce." Let us hope that such a description may never be applicable to any Irish asylums.

The views of Lugaro of heredity and other problems are of the highest interest to all psychologists and sociologists. His chapter on anatomical problems is full of original thought, the *rôle* of chemotrophism, of dynamic polarity, the law of avalanche, are all clearly and definitely explained, and their practical bearing upon psychological investigations fully and suggestively set down. The structure and function of the neuroglia is carefully considered, and the old ideas as regards the solely mechanical function of these cellular elements discredited, and "the hypothesis that the *rôle* of the neuroglia is a passive one is evidently, even from simple analogy, defective." With this remark most modern observers will agree.

In conclusion, the "Foreword" of Clouston alone, containing as it does a synopsis of Lugaro's book, is of interest as a capable review of the work of the Italian psychologist and his school. The translators have admirably performed their undertaking, and the work will be found of great helpfulness and interest to all genuine students of psychological medicine, and ought to be carefully read by all officials placed in responsible positions connected with the welfare and treatment of the insane.

The Open-Air Treatment of Pulmonary Tuberculosis. By F. W. BURTON-FANNING, M.D. (Cantab.), F.R.C.P. London: Cassell & Co., Ltd.

DOCTOR BURTON-FANNING presents in this volume a brief account of pulmonary tuberculosis, and the present-day treatment of early cases of the disease.

There is very properly a strong element of personal ex-

perience and opinion in this book, but no new doctrines are propounded, and some questions are raised without arriving at any decision. It would have been interesting, for instance, to have had more information about the use of tuberculin as an adjunct of the treatment. Many sanatorium physicians claim that they have improved their results by its use, but Dr. Burton-Fanning has not been able to confirm or rebut their claim. The author argues, however, that a patient's graduated exercise acts in some degree as a method of auto-inoculation of the circulation with the tubercular virus, and that such exercise is to be regarded as taking the place of any actual supply of tuberculin or other vaccine by mouth or subcutaneously.

The arrangement of the whole book is excellent ; a chapter on ætiology, and two on the diagnosis of early cases, precede the description of the treatment.

Great stress is laid on an accurate observation of temperature as an index of the stage and severity of the infection, as well as an indication in regulating the details of treatment ; a number of temperature charts are, therefore, introduced as illustrations.

The "open-air treatment," with its adjuncts of rest, diet, and exercise, are dealt with in a complete and careful manner.

In his directions for the management of patients and of the details of their treatment, the author is to be congratulated on having been able to make use of his own experience, and he writes often in the first person singular, greatly to the added interest and value of these chapters.

In the last chapter Dr. Burton-Fanning discusses the question, so often asked, as to the possibility of successful "home-treatment" of pulmonary tuberculosis. The directions for treatment are so simple that it would seem they could be carried out by any intelligent patient almost anywhere. The difficulty of obtaining a complete understanding of the great importance of an absolute thoroughness on the part of the patient and friend makes constant supervision very necessary, at any rate at the beginning of treatment ; and such supervision can best be had at a sanatorium. After a period of education by a physician at such an institution many patients can continue their treatment and do very well at home.

This book contains in a small space a complete and concise account of the treatment of early cases of consumption; it will be of the greatest use to many practitioners, who will find here the details of modern sanatorium methods.

The Dietetic Treatment of Diabetes. By B. D. BASU, Major I.M.S. (retired). Allahabad: The Panini Office, Bhuvuneshvari Ashram. 1909.

THIS little *brochure* of forty pages on the dietetic treatment of diabetes contains, as far as we can see, nothing very original. It is addressed not only to the medical profession, but also to the general public. Our candid opinion is that the British medical man will not learn very much from it, and we would strongly advise any diabetic member of the general public to seek and follow the advice of a physician instead of trying to determine what course he will adopt out of the rather bewildering variety of possible dietaries suggested within the short compass of the present book. Not that we have any fault to find with the author's statements. They, for the most part, consist of extracts from various well-known authorities, such as von Noorden, Haig, Brunton, Gautier and others, strung together by explanatory interpolations. Of his own experience the writer also insists on the importance of not overtaxing the kidneys in diabetes, and points out that diabetics in India usually live for many years, owing probably to the fact that they abstain from a meat dietary and live mostly on vegetables. A few hints on locally used carbohydrate substitutes may prove of use to local practitioners, while any one who wants a short summary of recent views on the dietary of diabetics generally might do worse than spend an hour over this little book.

Jejunal and Gastro-jejunal Ulcer following Gastro-jejunostomy. By HERBERT J. PATERSON, M.B., F.R.C.S.E.; Assistant Surgeon, London Temperance Hospital. London: John Bale, Sons & Daniellson. 1909.

THIS is a reprint of a paper read during the last session before the Royal Society of Medicine, and consists of an account of

two cases of jejunal ulcer following gastro-jejunostomy which came under the notice of the author, followed by a *résumé* of all previously reported cases, sixty-three in number, and also of a general discussion concerning the various ætiological and therapeutical problems connected with these ulcers. We have read the paper with much pleasure, and congratulate the author on the lucidity of his exposition and the cogency of his arguments. His main thesis is to prove that an excess of hydrochloric acid is the cause of the solitary jejunal ulcer which may be found in the efferent limb of the jejunum just below its artificial junction with the stomach. Without reviewing the evidence advanced in favour of this theory, we may at once state our assent to it. On purely *à priori* grounds it appears to us most reasonable that excess of hydrochloric acid escaping to some extent uncontrolled into the jejunum could cause injury and ulceration, and supported by the evidence now produced it is obvious that the *onus* of disproof lies with the opponents of Dr. Paterson's views. The author also draws an important distinction between ulceration at the actual gastro-jejunal junction and in the jejunum itself. The former type of ulceration he is inclined to believe to be the direct result of operation, but here we are much less inclined to follow him. The interval of a year or more that occurred in all the cases included in his tables, between the date of operation and the onset of the symptoms, seems to us decidedly against this view. There are many further points of interest discussed, more particularly with reference to the practical deductions that should be drawn from the author's conclusions, and which should guide the surgeon in the technique of performing gastro-enterostomy. Into these it is impossible to enter, but we commend their perusal and consideration to all surgeons.

Therapeutics of the Circulation. By Sir Lauder Brunton, Bart., F.R.S. London: J. Murray. 1908. Pp. 272.

In this book are collected the sum and substance of eight lectures delivered in 1905 in the Physiological Laboratory of the University of London, and the reputation of the distinguished lecturer is a guarantee of the quality of the lectures.

The first three lectures are taken up with the general physiology of the circulation and with the experimental illustration of blood-pressure.

The book is illustrated by 240 figures.

As might be expected, the action of digitalis is fully discussed, and many valuable hints and suggestions as to treatment are supplied.

It is a matter for regret that Mackenzie's work is not noticed, and even his name does not occur in the index.

Dr. Hugo Kronecker has added interesting notes of some of his own work and that of his scholars, which are printed in a special appendix.

Points of Practice in Maladies of the Heart. By SIR JAMES SAWYER, M.D. Birmingham: Cornish. 1908.

THIS small book embodies the Lumleian Lectures delivered at the Royal College of Physicians of London in 1908. There is nothing novel in them, and they simply reflect current views and the recognised principles of treatment in the management of cardiac disease.

Southall's Organic Materia Medica. By J. BARCLAY, B.Sc., F.C.S. Seventh Edition. Revised and enlarged. By E. W. MANN. London: Churchill. 1909.

THIRTY-FIVE years have passed since the first edition of "Southall's Materia Medica" appeared, and the present edition aims at incorporating recent advances in drug chemistry and pharmacognosy.

The book does not directly appeal to medical practitioners, and does not touch upon either pharmacology or therapeutics. To pharmaceutical students and chemists it may be commended as a reliable guide.

Diseases of the Skin and Eruptive Fevers. By J. F. SCHAMBERG, A.B., M.B. Philadelphia: Saunders. 1908.

No one will quarrel with the statement of the author in his preface that the specialist in diseases of the skin should be

skilled in the diagnosis not only of the ordinary dermatoses, but also of the rashes of the eruptive fevers, and it is needless to adduce proofs of this. Hence a considerable portion of the book is devoted to a study of the acute eruptive fevers. The characters of the several eruptions and their differential diagnosis are very fully described, and are represented by numerous photographic illustrations. This is the distinctive feature of the book, and 204 figures embellish the text.

The major part of the volume, that which deals with the ordinary sphere of dermatology, is succinctly written, and calls for no special criticism.

An Introduction to the Science of Radio-activity. By C. W. Raffety. London: Longmans, Green & Co. 1909. Pp. 220.

No one need ask for a more readable and lucid account of this newest child of science—radio-activity—than that supplied by Mr. Raffety. It is, in the best sense of the word, a popular account of an intricate subject, and we can strongly recommend it to our readers.

It presents a clear and straightforward review of the subject, and leads the reader gently on step by step, concluding with a description of some simple experiments feasible with inexpensive apparatus.

In the Appendix, Mr. Raffety gives a short and useful summary of the properties of the various "rays" and of the "periods" of the radio-active elements.

Further Advances in Physiology. Edited by Leonard Hill, M.B., F.R.S. London: E. Arnold. 1909. Pp. 440.

It is a gratifying proof of the demand for physiological instruction that the Editor of that useful volume, "Recent Advances in Physiology," has felt that there was an opening for a sequel volume, which is now before us.

The former book dealt mainly with problems of metabolism, secretion, and excretion. The present volume is devoted to the consideration of certain problems concerning the circulation and respiration, the neuro-muscular system, and vision.

The articles that appeal most to our own mind are these :—

B. Moore—The Equilibrium of Colloid and Crystalloid in Living Cells.

M. Flack—The Heart.

L. Hill—The Vascular System and Blood Pressure.

A. Keith—The Mechanism of Respiration in Man.

J. S. Bolton—Recent Researches on Cortical Localisation and on the Functions of the Cerebrum.

The other monographs deal with pulse records, muscular work, nerve physiology, and special sense physiology.

From this list it is evident there is food for all tastes. The general effect of the book is a stimulus to wider views, while it also rivets attention to many topics which have a particular application to pathology and clinical medicine.

Every practitioner who desires to keep abreast of the times should study each of these volumes referred to, even although he may here and there feel lost in the mazes of conflicting statements and contradictory results.

NEW PREPARATIONS AND SCIENTIFIC INVENTIONS.

Ferro-Glidine.

FERRO-GLIDINE is a close organic combination of iron with glidine—a pure vegetable protein of wheat—in much the same form as iron occurs in natural ferruginous food. Ferro-glidine is stated to be absolutely free from any irritating action on the mucous membranes and is assimilated in the same manner as food containing iron.

Arsan.

ARSAN is an organic combination of arsenic with glidine—a non-irritant, vegetable albumen, made wholly from wheat and entirely free from extractives. Arsan is absorbed gradually by the system, without flooding the tissues. The arsenic conveyed by it is only discoverable in the urine some days after it has been taken. The proprietors claim that it has been demonstrated that in arsan tablets the organically combined arsenic is much less toxic in its effects than in the inorganic salts of arsenic.

MEDICAL EDUCATION AND EXAMINATIONS IN IRELAND.

1909–1910.

Medical students in Ireland, as elsewhere, have in the first instance to choose between University Degrees and Non-University Qualifications or Diplomas. Should they elect to try for a University Degree, their choice must lie between the University of Dublin, which requires a Degree in Arts before registrable Degrees in Medicine, Surgery, and Midwifery are conferred, and the Royal University of Ireland, which—while not requiring a full Arts Degree—yet rightly insists on a liberal education in Arts, tested by more than one searching examination in the same, before a candidate graduates in the three branches of medicine already mentioned—Medicine, Surgery, and Midwifery. Under the Regulations of the School of Physic in Ireland (*vide infra*, page 283), considerable Professional Privileges are afforded to medical students in regard to the Arts Curriculum of the University of Dublin.

Outside the Universities, the chief Licensing Bodies are the Royal Colleges of Physicians and Surgeons. The position of the Apothecaries' Hall of Dublin as a Licensing Corporation under the Medical Act of 1886 has been defined by the appointment of Examiners in Surgery by the General Medical Council at the bidding of His Majesty's Privy Council.

The Royal Colleges of Physicians and Surgeons are in a position to give a first-class working qualification in Medicine, Surgery, and Midwifery—a qualification which is registrable under the Medical Acts, which is universally recognised as one of high merit, and the possession of which is attended by no disabilities, such as preventing its possessor from dispensing medicines or keeping open shop for the sale of medicines, if he is legally qualified to do so.

The Medical Schools in Ireland are—(1.) The School of Physic in Ireland, Trinity College, Dublin; (2.) The Schools of Surgery of the Royal College of Surgeons in Ireland (including the Carmichael College of Medicine and the Ledwich School of Medicine); (3.) The Catholic University Medical School, Cecilia-street, Dublin; (4.) The School of Medicine, Queen's College, Belfast; (5.) The School of Medicine, Queen's College, Cork; and (6.) The School of Medicine, Queen's College, Galway.

Facilities for Clinical Instruction in fully-equipped Medico-Chirurgical Hospitals exist in Dublin, Belfast, Cork, and Galway; but, as a rule, the Schools of Medicine in Ireland are not attached to a given hospital, or *vice versâ*, as is the case in London and other large centres of medical education. The student will, however, have little difficulty in selecting a hospital, in the wards of which he will receive excellent bedside teaching and have ample opportunity of making himself familiar with the aspect and treatment of disease.

The detailed information which follows is authentic, being taken directly from the published calendars of the respective licensing bodies.

REGULATIONS PRESCRIBED BY THE GENERAL MEDICAL COUNCIL.

With regard to the course of Study and Examinations which persons desirous of qualifying for the Medical Profession shall go through in order that they may become possessed of the requisite knowledge and skill for the efficient practice of the Profession, the General Medical Council have resolved that the following conditions ought to be enforced without exception on *all* who commence their Medical Studies at any time after Jan. 1, 1892:—

(*a.*) The period of Professional Studies, between the date of registration as a medical student and the date of Final Examination for any Diploma which entitles its bearer to be registered under the *Medical Acts*, must be a period of *bonâ fide* study during not less than five years. For the purpose of this requirement the close of the fifth year may be reckoned as occurring at the expiration of fifty-seven months from the date of registration.

(*b.*) In every course of Professional study and Examinations, the following subjects must be contained:—

(I.) Physics, including the Elementary Mechanics of Solids and Fluids, and the Rudiments of Heat, Light, and Electricity.
(II.) Chemistry, including the principles of the Science, and the details which bear on the study of Medicine.
(III.) Elementary Biology.
(IV.) Anatomy.
(V.) Physiology.
(VI.) Materia Medica and Pharmacy.
(VII.) Pathology.
(VIII.) Therapeutics.
(IX.) Medicine, including Medical Anatomy and Clinical Medicine.
(X.) Surgery, including Surgical Anatomy and Clinical Surgery.
(XI.) Midwifery, including Diseases peculiar to Women and to New-born Children. [By a recent decision of the General Medical Council the study of (XI.) must not commence till the student has held the posts of Clinical Clerk and Surgical Dresser.]
(XII.) Theory and Practice of Vaccination.
(XIII.) Forensic Medicine.
(XIV.) Hygiene.
(XV.) Mental Disease.

The first four of the five years of Medical Study must be passed at a School or Schools of Medicine recognised by any of the Licensing Bodies, provided that the First Year may be passed at a University, or Teaching Institution, recognised by any of the Licensing Bodies and approved by the Council, where the subjects of Physics, Chemistry, and Biology are taught.

A student who has, previous to registration, attended a course or courses of study in one or all of the subjects, Physics, Chemistry, or Biology, in any University, School of Medicine, or Teaching Institution recognised by any of the Licensing Bodies, may without further attendance be admitted to examination in these subjects: provided always that such course or courses shall not be held to constitute any part of the five years' course of professional study.

A graduate in Arts or Science of any University recognised by the General Medical Council, who has spent a year in the study of Physics, Chemistry and Biology, and has passed an examination in these subjects for the degrees in question, is held to have completed the first of the five years of medical study, provided that he has registered as a medical student with the General Medical Council.

The Examinations in the Elements of Physics, Chemistry, and

Biology should be passed before the beginning of the Second Winter Session.

The General Medical Council recommends the Licensing Bodies to require that the fifth year should be devoted to clinical work at one or more public hospitals or dispensaries, British or Foreign, recognised by any of the medical authorities mentioned in Schedule (A) of the Medical Act (1858), provided that no Qualification in Medicine ought to be granted without evidence of Clinical Instruction in Infectious Diseases.

I.

University of Dublin.

DEGREES AND DIPLOMAS IN MEDICINE, SURGERY, AND MIDWIFERY; AND IN DENTISTRY.

The Medical School of the University of Dublin has for its official title the name of The School of Physic in Ireland. It is officered by University Professors and Examiners and by four King's Professors appointed by the President and Fellows of the Royal College of Physicians of Ireland, acting as Trustees of the Estate of Sir Patrick Dun.

Matriculation.

Students cannot be permitted to attend any of the Courses of Instruction in the School of Physic in Ireland until they have Matriculated. There is no special Examination; the Public Entrance and Term Examinations of Trinity College, or any other of the Preliminary Examinations recognised by the General Medical Council, being accepted as equivalent. The Matriculation Fee is Five Shillings. It is not necessary for Students to have their names on the College Books, or to attend any of the Academical duties of the University, unconnected with the School of Physic, unless they desire to obtain a Diploma or Degree in Medicine, Surgery, and Midwifery. Students may matriculate at the commencement of either the Winter or the Summer Session. The 17th of November is the last day of admission to the Winter Session. In the Summer Session the day varies a good deal according to the time at which Easter occurs, and the Courses of Lectures for which the Student proposes to enter.

WOMEN STUDENTS.

Women Students are now admitted to the Degrees and Diplomas in Medicine, Surgery, and Midwifery, on the same conditions as men. A special Anatomical Department, with separate entrance, dissecting-room, and reading-room, has been erected by the Board of Trinity College for their accommodation.

The Qualifications in Medicine, Surgery, and Midwifery, and in Dental Science, granted by the University are as follow:—

The Degrees are:—

1. Bachelor in Medicine.
2. Bachelor in Surgery.
3. Bachelor in Obstetric Science.
4. Doctor in Medicine
5. Master in Surgery.
6. Master in Obstetric Science.
7. Master in Dental Science.[a]

The Diplomas are:—

1. Diploma in Public Health (formerly Qualification in State Medicine).
2. Diploma in Medicine.
3. Diploma in Surgery.
4. Diploma in Obstetric Science.
5. License in Dental Science.[a]

REGULATIONS FOR OBTAINING THE DEGREES OF M.B., B.Ch., AND B.A.O.

I. *Arts Course.*—Before they can join the Medical School Students must pass (*a*) a Junior Freshman Term Examination, or (*b*) a Special Preliminary Examination to be held in March, the standard and subjects of which shall be those of a Junior Freshman Examination, with the exception of Trigonometry, or (*c*) the Junior Freshman Michaelmas Examination exclusive of Trigonometry. They complete their Arts Course for the Freshman years, and obtain credit for the Final Freshman Examination by attending Arts Lectures in Mechanics—including the necessary amount of Trigonometry—English Composition and Logics in the Trinity Terms of the Junior and Senior Freshman years, passing the Preliminary Scientific Examination in full, and an Examination in Mechanics, Logics, English Composition, and *one* language—viz., French, German, Latin, or Greek. The Examination in Mechanics may be taken at the Ordinary Final

[a] See page 305.

Freshman or at a special Examination to be held at the date of the Preliminary Scientific in Physics and Chemistry.

They obtain credit for their Arts Course for the Sophister years, and for the B.A. degree thus :—

(*a*) They attend Courses of Lectures in Astronomy and in Ethics in the Trinity Terms of the Junior and Senior Sophister years, respectively, and write a composition on some subject connected with the Course on one lecture-day in each week.

(*b*) At the conclusion of the Astronomy Lectures they pass an Examination held by the Lecturers.

(*c*) They produce evidence of satisfactory progress in the Medical Studies of their third and fourth years (see p. 287 : Class Examinations).

(*d*) They pass at the B.A. Examination in the Ethics Course (*a*, above) and in English Composition, and Part II. of the Intermediate Medical Examination.

II. *Medical Course.*—They produce evidence of having passed the Special Preliminary Examination, or its equivalent (see above), pay a Matriculation fee of 5s., and proceed with the following Courses and Examinations :—

First Year—

First Winter[a]—

Chemistry Lectures	£2 2 0
Physics and Mechanics Lectures ..	—
Practical Physics	—
Systematic Anatomy Lectures ..	3 3 0
Descriptive Anatomy Lectures ..	3 3 0
Dissections	5 5 0
	£13 13 0

First Summer—

Botany, Lectures and Practical ..	£1 11 6
Zoology, Lectures and Practical ..	2 2 0
Practical Chemistry[b]	3 3 0
Physics, Lectures and Practical[b] ..	—
	£6 16 6

[a] In the Table of Fees here given certain Reductions allowed to Matriculated Students have already been made.

[b] Students who join the School in a Summer Session should consult the Professors of Chemistry and of Physics before entering for these Courses.

Preliminary Scientific.

The subjects are—(*a*) Chemistry and Physics, and (*b*) Zoology and Botany. All the subjects may be passed at the same time, or they may be passed in two groups, (*a*) and (*b*).

Before presenting themselves for this Examination, Students must have attended the recognised Courses of Instruction in the subjects of the Examination.

Second Year—

Second Winter—

Anatomy Lectures	£3	3	0
Physiology Lectures	3	3	0
Practical Physiology	2	2	0
Dissections	5	5	0
Hospital Elementary Instruction[a]	12	12	0
	£26	5	0

Second Summer—

Histology	£5	5	0

Intermediate Medical, Part I.

The subjects are—Anatomy, Histology, and Physiology (omitting the Physiology of the Sense-Organs, and of the Central Nervous System). All subjects must be passed at the same time.

Before presenting themselves for the Examination, Students must have attended the Courses of Instruction prescribed for the First and Second years of Medical study, and *must have completed the Preliminary Scientific Examination.*

The Examination will consist of a paper, a practical, and an oral in each subject.

Third Year—

Third Winter[b]—

Applied Anatomy Lectures	£3	3	0
Physiology Lectures	3	3	0
Surgery	2	2	0
Hospital Practice	12	12	0
	£21	0	0

[a] Hospital attendance cannot be commenced until the student has obtained credit for six months' dissections.

[b] Students who have credit for two years' dissections in Trinity College will be allowed to dissect in their third or subsequent year on payment of £3 3s. for the Winter Session.

Intermediate Medical, Part II.

The subjects are—Applied Anatomy and Applied Physiology (including the Physiology of the Nervous System and of the Sense-Organs). Both subjects must be passed at the same time.

Before presenting themselves for the Examination, Students must have attended the prescribed Courses of study, and *have completed Part I. of the Examination.*

The Examination will consist of a paper and an oral in each subject.

Third Summer—

Materia Medica and Therapeutics ..	£3 3 0
Operative Surgery [a]	2 12 6
	£5 15 6

N.B.—The Courses of the Fourth Year cannot be commenced until Part I. of the Intermediate Examination has been completed.

Fourth Year—

Fourth Winter—

Practice of Medicine	£3 3 0
Midwifery	3 3 0
Pathology [b]	2 2 0
Hospital Practice	12 12 0
	£21 0 0

Fourth Summer—

Medical Jurisprudence and Hygiene..	£3 3 0
Practical Pathology	2 2 0
	£5 5 0

Final Medical, Part I.

The subjects are—Pathology, Materia Medica and Therapeutics, Medical Jurisprudence and Hygiene.

Before they are admitted to the Examination, Students must have attended the prescribed Courses of study, and paid the *Liceat* Fee (£5).

Vaccination (Fee, £1 1s.) should be taken out in the fourth year.

[a] Operative Surgery may be taken by those Students only who have completed Part I. of the Intermediate Examination.

[b] Freshman Students pay £3 3s.

Fifth Year—		
Practical Midwifery	£10	10 0
Mental Disease	3	3 0
Ophthalmic Surgery	3	3 0
	£16	16 0

Final Medical, Part II.

The subjects are—(*a*) Medicine, Clinical Medicine, and Mental Disease; (*b*) Surgery, Clinical Surgery, Surgical Operations, and Ophthalmic Surgery; (*c*) Midwifery and Gynæcology (clinical, papers, and *vivâ voce*).

At and after the Trinity Term Final in Surgery, Candidates will be required to produce a Certificate of Instruction and Practice in the Administration of General Anæsthetics.

Students may present themselves for Examination in any of these groups (*a*), (*b*) or (*c*), separately or together, at any of the Examinations during their Fifth Year; but they must leave at least one of these groups until the end of their Fifth Year. Before presenting themselves for any of these Groups, Students must have attended all the prescribed Courses of Instruction in the subject in which they present themselves for Examination, and paid the *Liceat* Fee (£5).

Total Expenses of foregoing Courses.

I. Lectures	£67	4 0
II. Hospitals	55	13 0
III. Degrees (M.B., B.Ch., B.A.O.) ..	27	0 0
Total ..	£149	17 0

University Diplomas.

Candidates for the Diplomas in Medicine, Surgery, and Obstetric Science must be matriculated in Medicine, and must have completed two years in Arts, and five years in Medical Studies.

The dates, regulations, and subjects of Examination are the same as for the Degrees.

Diplomates on completing the Course in Arts, and proceeding to the Degree of B.A., may be admitted to the Degree of Bachelor on paying the Degree Fees.

The *Liceat* fees are the same as for the Finals.

Candidates who have completed the prescribed Courses of study and passed all the Examinations will be entitled, if Graduates in Arts, to have conferred on them the Degrees of M.B., B.Ch., B.A.O., on payment to the Senior Proctor of the Degree Fees amounting to £17. A corresponding regulation applies to the Diplomas, the Fees for which are £11. They will also obtain from the Senior Proctor a Diploma entitling them to be entered on the Register of Medical Practitioners under the Medical Act, 1886.

RE-EXAMINATION.

Every Student who, having entered for any of the Medical Examinations, fails, for any reason, to obtain credit for it, shall pay a fee of 10s. 6d. for any occasion on which he presents himself again for the same Examination.

CLASS EXAMINATIONS.

Students will be required to show a reasonable knowledge, as ascertained by Examination during the Session, of the subject of a Course of Lectures before a certificate of satisfactory attendance is issued by the Professor in charge, and the return to the Senior Lecturer is to include a statement that this condition has been fulfilled.

DATES OF EXAMINATIONS FOR 1909–1910.

Preliminary Scientific begins—October 11; March 21; June 20.

Intermediate Medical, Part I., begins—October 11; March 14; June 13.

Intermediate Medical, Part II., begins—October 18; March 21; June 20.

Final Medical, Part I., begins—October 18; March 21; June 27.

Final in Medicine, begins—November 8; February 28; June 6.

Final in Surgery begins—November 15; March 7; June 13.

Final in Midwifery begins—November 22; March 14; June 20.

Notice of intention to enter must be given to the Registrar of the School *not less than eight clear days before* each Examination begins. Printed forms of notice are provided. Certificates, when required, and *Liceat* or re-examination fees, when due, are to be presented or paid when Students enter their names for the Examination. If this be not done entries will not be received.

ATTENDANCE ON LECTURES.

Students are expected to attend all the Lectures or Demonstrations delivered in each Course for which they enter, whether in the Winter or the Summer Session; but in order to provide for unavoidable absence, such as illness or attendance at Examinations, they are allowed credit for a Course if they have been present at three-fourths of the Lectures or Demonstrations actually delivered. If this proportion involve a fraction, the next highest whole number is reckoned as the minimum. If more than one-fourth have been missed, application must be made through the Committee of the School of Physic to the Board of Trinity College, by whom each case is decided on its merits, but the applicant must produce satisfactory reasons for omission of *all* the Lectures missed, not of the excess above one-fourth only. No Student will be allowed credit for a Course who has not been found diligent in attendance, when not prevented by illness or other cause considered sufficient by the Board.

HOSPITAL ATTENDANCE.

Three Courses of nine months' attendance on the Clinical Lectures of Sir Patrick Dun's or other Metropolitan Hospital recognised by the Board of Trinity College are required.

During the first three months of the Winter Session in which Students begin their Hospital work, they must attend an Elementary Course of Hospital Instruction for one hour per day.

This certificate must be signed by all the Teachers who have taken part in the Instruction, and the attendances of each day must be entered in a list, supplied by the Board of Trinity College, and initialled by the teachers for that day.

Students will be required to attend on at least forty-five occasions in this three months' course in order to obtain credit for it.

During other years also a certificate of attendance at Hospital is required by the Board of Trinity College.

Students who shall have diligently attended the practice of a recognised London or Edinburgh Hospital for one year, of a recognised County Infirmary, or of a recognised Colonial Hospital for two years previous to the commencement of their Metropolitan Medical Studies, may be allowed, on special application to the Board of Trinity College, to count the period so spent as equivalent to one year spent in a recognised Metropolitan Hospital.

PRACTICAL VACCINATION.[a]

One month's instruction in Practical Vaccination is required to be attended at the Vaccine Department, Local Government Board for Ireland, 45 Upper Sackville Street; at No. 1 East Dispensary, 11 Emerald Street; or, until further notice, at the Grand Canal Street Dispensary.

MENTAL DISEASE.

A Certificate of attendance on a three months' Course of Practical Study of Mental Disease in a recognised Institution is required.

PRACTICAL MIDWIFERY.

A Certificate of attendance on a six months' Course of Practical Midwifery with Clinical Lectures, including not less than thirty cases, is required.

OPHTHALMIC SURGERY.

A Certificate of attendance on a three months' Course of Ophthalmic Surgery is required.

DIPLOMA IN PUBLIC HEALTH OR STATE MEDICINE.

The Diploma in Public Health is conferred, after examination, by the University of Dublin, upon Candidates fulfilling the following conditions:—

1. The Candidate must be a Doctor in Medicine, or Graduate in Medicine and Surgery, of Dublin, Oxford, or Cambridge, or a Doctor in Medicine of London University.

2. A period of not less than twelve months shall elapse between the attainment of a registrable qualification and admission to any part of the Examination.

3. [b] The Candidate must have completed, subsequent to obtaining a registrable qualification, a period of six months in a Laboratory

[a] The Local Government Board for Ireland require that, on and after May 1st, 1906, Medical Officers of Dispensary Districts must have attended a six weeks' course of instruction in vaccination with six attendances, four being in consecutive weeks, must have passed an examination, and must show practical knowledge in performing Vaccination. The Local Government Board recognise only the Special Certificates of Proficiency in Vaccination granted by the following Vaccinators in Ireland authorised to give such certificates—namely, the Medical Officers of the Vaccine Department, 45 Upper Sackville Street, Dublin; the Workhouse Infirmary, Cork; the Workhouse Infirmary, Belfast.

[b] This condition does not apply to Practitioners registered or entitled to be registered on or before January 1, 1890.

recognised by the Provost and Senior Fellows, in practical instruction in Chemistry and Bacteriology applied to Public Health, and also have attended, practically, outdoor Sanitary work for six months, under an approved Officer of Health, of which at least three months shall be distinct and separate from the period of Laboratory Instruction.

NOTE 1.—In the case of an Officer of the Royal Army Medical Corps, a certificate of outdoor sanitary work from a Staff Sanitary Officer may be accepted instead of one from a Medical Officer of Health.

4. The Candidate must, after obtaining a registrable Qualification, have attended during three months the practice of a Hospital for Infectious Diseases at which opportunities are afforded for the study of Methods of Administration.[a]

NOTE 1.—Methods of Administration shall include the methods of dealing with patients at their admission and discharge, as well as in the wards, and the Medical Superintendence of the Hospital generally.

NOTE 2.—In the case of an Officer of the Royal Army Medical Corps, a Certificate from a Principal Medical Officer under whom he has served, stating that he has, during a period of at least three months, been diligently engaged in acquiring a practical knowledge of Hospital Administration in relation to Infectious Diseases, may be accepted as evidence under *Rule* 4.

The Examination to be passed by the Candidate is prescribed as follows:—

PART I.

Chemistry—Paper and Practical.

Experimental Physics and Meteorology—Practical.

Bacteriology and Pathology—Paper and Practical.

Candidates are liable to be examined in the method of conducting *post-mortem* Examinations.

PART II.

Hygiene and Epidemiology—Paper.

Sanitary Engineering—Paper.

Public Health Acts and Vital Statistics—Paper.

Practical Sanitary Report.

The two Parts may be passed consecutively or with an interval between, at the option of the Candidate, provided that the

[a] This condition does not apply to Practitioners registered, or entitled to be registered, on or before January 1, 1890.

requisite curriculum for each Part has been completed before the Candidate presents himself.

Examinations for Part I. will begin on December 6, 1909, March 7, 1910, and June 6, 1910; for Part II. on December 9, 1909, March 10, 1910, and June 9, 1910.

Candidates are required to send in their names to the Registrar of the School of Physic at least a week before the first day of Examination.

Candidates who have registered since January 1, 1890, are required to apply to the Board of Trinity College for leave to present themselves a month before the Examination begins, and to submit at the same time Certificates of the required Courses of Study.

A fee of £10 10s. is required. £2 2s. must be paid to the Registrar of the School on entering for Part I.; the balance to be paid to the Senior Proctor on applying for the Diploma.

Course in Chemistry for D. P. H.

The complete analysis of water. Estimation of carbon dioxide, and detection of ammonia and other constituents or impurities in air. Complete analysis of milk and butter. Detection of adulterants in milk, flour, tea, coffee, mustard, and pepper. Detection of preservatives in foods. Detection of picric acid in beer and of alum in bread and flour. Microscopic examination of starches. Determination of acidity in vinegar. Identification and examination of disinfectants. Detection of various poisons in contents of stomach. General chemistry of ether, chloroform, nitric acid, chloral. Assay of caffeine.

Fee for the Course, £5 5s.

Candidates can join at any time during the Medical year by arrangement with the Professor of Chemistry.

Part II.—Vital Statistics and the Acts Relating to Public Health in Ireland, and Sanitary Engineering.

A collection of Sanitary Appliances has been placed in the Engineering Museum, with which Candidates should make themselves familiar.

The attention of Students is directed to the importance of obtaining a Diploma in Public Health as soon as possible after they obtain their Medical Degrees. An increasing number of Public Bodies are requiring it as well as the usual Qualifications in Medicine, Surgery, and Midwifery.

II.

Royal University of Ireland.

COURSES FOR DEGREES IN MEDICINE, SURGERY, AND OBSTETRICS.

General Regulations.

The Course for these Degrees shall be of at least five Medical years' duration. But Graduates in Arts or Science who shall have spent a year in the study of Physics, Chemistry, and Biology, and have passed an Examination in these subjects for the Degrees in question, shall be held to have completed the first of the five years of Medical Study.

Students who commenced their Medical Studies after Jan. 1, 1892, must furnish evidence of having been registered by the General Medical Council, as Students in Medicine, for at least 57 months, before being admitted to the M.B., B.Ch., and B.A.O. Degrees Examination.

No one can be admitted to a Degree in Medicine who is not twenty-one years of age.

All Candidates for these Degrees, in addition to attending the lectures and complying with the other conditions to be from time to time prescribed, must pass the following Examinations:—

The Matriculation Examination.
The First University Examination.
The First Examination in Medicine.
The Second Examination in Medicine.
The Third Examination in Medicine.
The Examination for the M.B., B.Ch., B.A.O. Degrees.

The Course of Medical Studies shall be divided into five Periods of one Medical Year each.

Candidates shall furnish proper Certificates of attendance at the several Courses of Medical Instruction prescribed for the different years of the curriculum.

No such Certificate will be received unless it attests a *bonâ fide* attendance at three-fourths of the whole Course. *Students are reminded that certificates of attendance at Night Lectures will not be accepted.*

No Certificates of instruction in any of the Courses of Medical Studies, either in connection with Lectures or Hospitals, can be received, unless issued by an Institution which has been formally recognised by the Senate.

Attention is directed to the fact that Certificates for attendance

at Courses in recognised Institutions are accepted only when substantially in accordance with the requirements of the University.

The prescribed courses in Experimental Physics, Chemistry, Biology, Anatomy and Physiology must be attended in Institutions provided with the appliances required for the performance by the Students of proper Experimental Courses and Practical Work in these subjects.

Where Certificates in a special department (Fever, Mental Diseases, Ophthalmology, etc.) are presented, they must be signed by the Physician or Surgeon in charge of such department.

THE EXAMINATION FOR THE M.B., B.Ch., B.A.O. DEGREES.

Candidates may present themselves for this Examination after an interval of such period, not being less than one Medical Year from the time of passing the Third Examination in Medicine, as the Senate may from time to time prescribe, provided they shall have completed the entire Medical Curriculum.

Printed forms of application for admission to this Examination may be had from "The Secretaries, the Royal University of Ireland, Dublin," after February 11 for the Spring Examination, and after July 15 for the Autumn Examination.

This Examination consists of three parts:—

(*a*) Medicine, Theoretical and Clinical, including Therapeutics, Mental Diseases, Medical Jurisprudence, Sanitary Science, and Medical Pathology.

(*b*) Surgery, Theoretical, Clinical, and Operative, including the use of Instruments and Appliances; Surgical Anatomy; Ophthalmology and Otology,[a] Surgical Pathology.

(*c*) Midwifery and Diseases of Women and Children.

All Candidates must enter for and go through the entire Examination, but a Candidate may be adjudged to have passed in any of the foregoing parts in which he satisfies the Examiners.

Upon completing satisfactorily his Examination in all three divisions, the Candidate, in addition to the parchment Diploma recording his admission to the M.B., B.Ch., B.A.O. Degrees, will receive a Certificate of having passed a Qualifying Examination in the subjects of Medicine, Surgery, and Midwifery.

[a] Candidates at this Examination must exhibit reasonable proficiency in the use of the Ophthalmoscope and Laryngoscope.

The fee for this Certificate is *Ten Pounds*, which must be paid before admission to these Degrees.

HONOURS.

There are Special Examinations for Honours in connection with—

The First Examination in Medicine.

The Second Examination in Medicine.

The Third Examination in Medicine.

The M.B., B.Ch., B.A.O. Degrees Examination.

The Examinations for Honours are held subsequently to the corresponding Pass Examinations.

DIPLOMA IN PUBLIC HEALTH.

This Diploma is conferred only on Graduates in Medicine of the University.

Candidates may present themselves for this Examination after an interval of twelve months from the time of obtaining the M.B., B.Ch., B.A.O. Degrees.

Printed forms of application for admission to this Examination may be had from "The Secretaries, the Royal University of Ireland, Dublin."

Every Candidate must, when entering for the Examination, produce :— [a]

(*a*) A Certificate of having, *after obtaining the M.B., B.Ch., B.A.O. Degrees*, attended during a period of six months Practical Instruction in a Laboratory approved by the University. The nature of this course is fully indicated by the detailed Syllabus of the Examinations in Physics, Climatology, Chemistry, Microscopy, Bacteriology, etc.

(*b*) A Certificate of having, *after obtaining the M.B., B.Ch., B.A.O. Degrees*, during six months (of which at least three months shall be distinct and separate from the period of laboratory instruction required under (*a*)) been diligently engaged in acquiring a practical knowledge of the duties, routine and special, of Public Health Administration, under the supervision of :—

(1) In England and Wales, the Medical Officer of Health of a County or of a single Sanitary District having a popula-

[a] These rules (*a*), (*b*), shall not apply to Medical Practitioners registered, or entitled to be registered, on or before January 1, 1890.

tion of not less than 50,000, or a Medical Officer of Health devoting his whole time to Public Health Work; or

(2) In Scotland, a Medical Officer of Health of a County or Counties, or of one or more Sanitary Districts having a population of not less than 30,000; or

(3) In Ireland, a Medical Superintendent Officer of Health of a District or Districts having a population of not less than 30,000; or

(4) A Medical Officer of Health who is also a Teacher in the Department of Public Health of a recognised Medical School; or

(5) A Sanitary Staff Officer of the Royal Army Medical Corps having charge of an Army Corps, District, or Command, recognised for this purpose by the General Medical Council; or

*** The certificate of an Assistant Medical Officer of Health of a County or of a single Sanitary District having a population of not less than 50,000 may be accepted as evidence under *Rule* (*b*), provided the Medical Officer of Health of the County or District in question permits the Assistant Officer to give the necessary instruction and to issue Certificates. Provided that the period of six months may be reduced to a period of three months (which shall be distinct and separate from the period of laboratory instruction required under *Rule* (*a*)), in the case of any Candidate who produces evidence that, after obtaining a registrable Qualification, he has during three months attended a course or courses of instruction in Sanitary Law, Sanitary Engineering, Vital Statistics, and other subjects bearing on Public Health Administration, given by a Teacher or Teachers in the Department of Public Health of a recognised Medical School.

Every Candidate must produce evidence that, after obtaining a registrable Qualification, he has attended during three months the practice of a Hospital for Infectious Diseases at which opportunities are afforded for the study of Methods of Administration.

Candidates at this Examination must answer in the following subjects:—

I. Physics.
II. Chemistry.
III. Meteorology.
IV. Sanitary Engineering and Architecture.
V. Bacteriology.
VI. Hygiene, Sanitary Law, and Vital Statistics.

In connection with the subjects of Sanitary Engineering and Architecture, candidates will be required to draw up a Sanitary Report upon the condition of dwelling-houses or other buildings selected for the purpose, and to read plans, scales, sections, etc.

The Examination consists of two parts, which may be passed separately or together.

Part I. comprises the following subjects:—

Physics.
Chemistry.
Meteorology.
Sanitary Engineering and Architecture.

Part II. comprises the following subjects:—

Bacteriology.
Hygiene, Sanitary Law, and Vital Statistics.

The Examination in each part will be oral and practical as well as written.

DIPLOMA IN MENTAL DISEASES.

This Diploma shall be conferred only on Graduates in Medicine of the University.

Printed forms of application for admission to this Examination may be had from "The Secretaries, the Royal University of Ireland, Dublin."

The subjects for this Examination are those prescribed for the Hutchinson Stewart Scholarship for proficiency in the treatment of Mental Diseases.

Belfast.

Queen's University.

Clinical instruction is given at the Belfast Royal Victoria Hospital. The Ulster Hospital for Diseases of Women and Children, the Belfast Maternity Hospital, the Belfast Ophthalmic Hospital, the Ulster Eye, Ear, and Throat Hospital, the Belfast District Lunatic Asylum, and the Belfast Hospital for Sick Children are open to students.

A pamphlet containing full information can be had free on application to the Registrar, Queen's University, Belfast.

Cork.

University College.

Clinical instruction is given at the North and South Infirmaries (each 100 beds). Students also can attend the Mercy Hospital

(60 beds), the Cork Union Hospital, the County and City of Cork Lying-in-Hospital, the Maternity, the Hospital for Diseases of Women and Children, the Fever Hospital, the Ophthalmic and Aural Hospital, and the Eglinton Lunatic Asylum. The session at University College extends from October to April inclusive (twenty-seven weeks), but the hospitals are open to students in May, June, and July also, and arrangements have been made for the delivery of some of the three months' Courses of Lectures during the months of April, May and June.

Galway.

University College.

Clinical instruction is given at the Galway County Infirmary and the Galway Town Hospital.

Prizes.—Attached are eight scholarships of the value of £25 each. The Council may award Exhibitions to matriculated students at the examinations for junior scholarship. All scholarships and exhibitions of the second, third, and fourth years may be competed for by students who have attained the requisite standing in any medical school recognised by the College Council, and have passed the Matriculation Examination in the College, or in the Royal University of Ireland.

III.

Royal Colleges of Physicians and Surgeons, Ireland.

REGULATIONS FOR THE EXAMINATIONS IN MEDICINE, SURGERY, AND MIDWIFERY REQUIRED FOR REGISTRATION UNDER THE MEDICAL ACT, 1886.

These Regulations are obligatory on all Candidates commencing their Studies on or after October 1st, 1902.

PRELIMINARY EXAMINATION AND REGISTRATION.

The General Medical Council requires that every Candidate shall produce evidence—

(*a*) Of having, before entering on medical studies, passed a Preliminary Examination in general education recognised by the General Medical Council; and

(*b*) Of having been registered by that Council as a Student

in Medicine, according to Regulations, which may be obtained on application at the office of the General Medical Council, 299 Oxford Street, London, W., or its Branches—Dublin, 35 Dawson Street; Edinburgh, 54 George Square.

Each Candidate before receiving his Diplomas must produce a Registrar's Certificate, or other satisfactory evidence, that he has attained the age of twenty-one years.

PROFESSIONAL EXAMINATIONS.

Every Candidate is required to pass four Professional Examinations.

Candidates will be admissible to the various Examinations as under :—

First Professional Examination, not earlier than the end of the first winter session.

Second Professional Examination, not earlier than the end of the second winter session.

Third Professional Examination, not earlier than the end of the third year of medical study.

Final Professional Examination, not earlier than the end of the fourth year of medical study; but it cannot be completed till the end of the fifth year of medical study.

No Candidate shall be admitted to any Examination within three months of his rejection in the subjects of that Examination by this or any other Licensing Body.

FIRST PROFESSIONAL EXAMINATION.

FEES.

The Fee for this Examination is £15 15s.

The subjects of the First Professional Examination are :—

Division A.—Chemistry and Physics.

Division B.—Biology.

The Examination in Chemistry includes a Practical Examination in the Laboratory.

Every Candidate is required to produce evidence—

(1) Of having passed a satisfactory Preliminary Examination in General Education; and

(2) Of having diligently attended Courses of Instruction in

Division A.— (*a*) Theoretical Chemistry, six months.
(*b*) Practical Chemistry, three months.
(*c*) Physics, three months.

Division B.— (*d*) Biology, three months.

Candidates are recommended to present themselves in all the Subjects of the First Professional Examination at one time, but they may present themselves either in Division A or Division B provided that they have completed the curriculum as far as it concerns the "Division" in which they present themselves for Examination.

Second Professional Examination.

Fees.

The Fee for this Examination is £10 10s.

The subjects of the Second Professional Examination are :—

Division A.—Anatomy.

Division B.—Physiology and Histology.

Before admission to the Second Professional Examination every Candidate must have passed in the subjects of the First Professional Examination, and is required to produce evidence of having diligently attended :—

(*a*) The Practice of a Medico-Chirurgical Hospital for nine months.

(*b*) Anatomical Dissections; two courses of six months each; or one course of six months and two courses of three months.

Lectures in :—

(*c*) Anatomy, six months.

(*d*) Physiology, six months.

(*e*) Practical Physiology and Histology, three months.

Third Professional Examination.

Fees.

The Fee for this Examination is £9 9s.

The subjects of the Third Professional Examination are :—

Division A.—Pathology.

Division B.—Materia Medica, Pharmacy, and Therapeutics.

Division C.—Forensic Medicine and Public Health.

Before admission to the Third Professional Examination, every Candidate must have passed in the subjects of the Second Professional Examination, and is required to produce evidence of having diligently attended courses of instruction in :—

(*a*) The Practice of a Medico-Chirurgical Hospital, nine months.

(*b*) Pathology.

(1) A Systematic Course of three months.

(2) A Laboratory Course of practical instruction in a recognised Medical School, three months.

These Courses may be taken concurrently.

(*c*) Materia Medica, Pharmacy, and Therapeutics, three months.

(*d*) Public Health and Forensic Medicine, three months.

Candidates may present themselves in any one or more "Divisions," but Certificates of study in all three Divisions must be produced before Candidates will be permitted to present themselves for Examination in any one Division.

Final Professional Examination.

Fees.

The Fee for this Examination is £6 6s.

The subjects of the Final Professional Examination are :—

Division A.—Medicine, including Fevers, Mental Diseases, and Diseases of Children.

Division B.—Surgery, including Operative Surgery and Ophthalmic Surgery.

Division C.—Midwifery and Gynæcology, Vaccination, and Diseases of New-born Children.

Before admission to the Final Professional Examination, every Candidate must have passed in the subjects of the Third Professional Examination, and is required to produce evidence of having diligently attended :—

Division A.—The Practice of a Medico-Chirurgical Hospital for nine months (unless such evidence has been previously produced for admission in Division B).

The Practice of a recognised Fever Hospital, or the Fever Wards of a recognised Clinical Hospital, three months.

Clinical Instruction in Mental Diseases, one month (12 attendances).

Lectures on Medicine, six months at a recognised Medical School.

Of having diligently performed the duties of Medical Clinical Clerk in a recognised Hospital for three months.

Division B.—The Practice of a Medico-Chirurgical Hospital, nine months (unless such evidence has been previously produced for admission in Division A).

Clinical Instruction in Ophthalmic and Aural Surgery, three months.

Lectures on Surgery, six months at a recognised Medical School.

Instruction in Operative Surgery, three months at a recognised Medical School.

Evidence of having diligently performed the duties of Surgical Dresser in a recognised Hospital for three months.

Division C.—Midwifery Hospital, or Maternity, including evidence of having been present at twenty labours, six months.

Instruction in Vaccination; six attendances to be certified by a Public Vaccinator.[a]

Lectures on Midwifery (including Diseases Peculiar to Women and to New-born Children), six months at a recognised Medical School.

Candidates are recommended to present themselves in all the subjects of the Final Examination at one time; but a Candidate at or after the end of the fourth year may present himself in any one of the Divisions A, B, or C, provided he has completed his Curriculum as far as concerns the Division in which he presents himself. The Examination in at least one of the Divisions must be deferred till the end of the fifth year.

Before completing the Final Examination a Candidate must have passed four years in Medical Studies other than those for the First Professional Examination.

[a] By a Regulation of the English Privy Council no one can be appointed a Public Vaccinator in England who does not produce a certificate of proficiency in vaccination from a person authorised by the English Privy Council to grant same.

Candidates must have passed in all the subjects of the Final Examination before any Diploma can be granted.

Each Candidate before receiving his Diplomas must produce a Registrar's Certificate, or other satisfactory evidence, that he has attained the age of twenty-one years.

EXEMPTIONS.

Candidates who have passed in any of the required subjects at Examinations conducted by any Licensing Body recognised by the Royal College of Physicians and the Royal College of Surgeons may, at the discretion of the Committee of Management, be exempted from further examination in such subjects under these regulations.

Certificate of Study.

All Lecture Certificates shall be signed by the Lecturer or Clinical Teacher. In case of absence or illness of the Lecturer or Teacher the Registrar or other duly accredited official shall sign for such absent Lecturer or Teacher, stating the reason for his so doing.

Winter Courses shall consist of not less than 50 Lectures, and Summer Courses of not less than 30 Lectures.

No Lecture Certificate shall be received unless the number of attendances certified thereon shall be at least *two-thirds* of these numbers.

As regards Medical and Surgical Hospital Certificates, the number of daily attendances certified shall not be less than 80 for the Winter Session, and 40 for the Summer Session.

DATES OF EXAMINATIONS.

(*For the Conjoint Diploma of the Royal Colleges of Physicians and Surgeons of Ireland.*)

Preliminary	-	March, June, and October.
First Professional	-	January, April, June, and October.
Second ,,	-	January, April, July, and October.
Third ,,	-	January, April, July, and October.
Final Examination	-	January, April, July, and October.

REGULATIONS FOR CANDIDATES FOR THE DIPLOMA IN PUBLIC HEALTH.

The following Regulations are compulsory on all Candidates presenting themselves for Examination after January 1st, 1903, except as undernoted.

Stated Examinations for the Diploma in Public Health commence on the first Monday of the months of February, May, July, and November.

A special Examination for the Diploma may, at the discretion of the Committee of Management, be obtained—except during the months of August and September—on application at least one fortnight before the date of the proposed Examination, and payment of £15 15s. in addition to the ordinary Fees mentioned below.

Every Candidate for the Diploma in Public Health must be a Registered Medical Practitioner. He must return his name to the Secretary of the Committee of Management under the Conjoint Scheme, Royal College of Physicians, Dublin, one fortnight before the Examination, and lodge with him a Testimonial of Character from a Fellow of either of the Colleges, or of the Royal Colleges of Physicians or Surgeons of London or Edinburgh, together with certificates of the prescribed course of study.

Candidates registered as Medical Practitioners or entitled to be so registered after January 1st, 1890, must comply with certain Resolutions and Rules, adopted by the General Medical Council on December 2nd, 1902, May 29th and November 30th, 1903, May 31st, 1904, and May 25th and 26th, 1905, in regard to Diplomas in Public Health.

*** Certain of the *Rules* as to study shall not apply to Medical Practitioners registered, or entitled to be registered, on or before January 1st, 1890.

The Fee for the Examination is Ten Guineas, which must be lodged in the Ulster Bank, Dublin, to the credit of the Committee of Management. Fees are not returned to any Candidate who withdraws from, or is rejected at, any Examination. The Fee for re-examination is Five Guineas.

The Examination for the Diploma in Public Health comprises the following subjects :—Chemistry and Physics, Engineering and Architecture, Meteorology, Sanitary Law, Vital Statistics, Hygiene, Bacteriology.

IV.

Apothecaries' Hall in Ireland.

The First, Second, and Third Professional Examinations are held four times a year—viz., commencing the third Monday in January, April, July, and October.

The Final Examinations are held in January and July.

The Fees payable for each Examination are as follow :—

First Professional	-	-	£5 5 0
Second „	-	-	5 5 0
Third „	-	-	5 5 0
Final Examination	-	-	6 6 0

A Candidate is allowed for each Professional Examination which he has completed at any other Licensing Body, except the Final.

Ladies who comply with the regulations will be admitted to these examinations.

Candidates may be admitted to a Special Examination, under special circumstances, which must be laid before the Examination Committee. If the Candidate's application be granted, an extra fee of Ten Guineas over and above the full fee is required.

Candidates already on the Register will receive the Diploma of the Hall, on passing an Examination in the subjects which are not covered by their previous qualifications, and on paying a fee of Ten Guineas. If Medicine or Surgery is required, additional fees will be charged.

COURSE OF STUDY FOR THE DIPLOMA.

Candidates who desire to obtain the Letters Testimonial of the Apothecaries' Hall in Ireland must, before proceeding to the Final Examination, produce evidence of having been registered as a Medical Student for 57 months; also of having attended Courses of Instruction as follows:—

Winter Courses of Six Months.

One Course each of the following:—

Anatomy (Lectures).
Chemistry—Theoretical.
Midwifery.
Practice of Medicine.
Physiology, or Institutes of Medicine.
Surgery.
Dissections, two courses of six months each.

Courses of Three Months.

One Course of each of the following:—

Materia Medica.
Medical Jurisprudence.
Chemistry—Practical.
Practical Physiology and Histology.

Operative Surgery.
Physics.
Clinical Ophthalmology.
Biology.
Clinical Instruction in Mental Disease.
Pathology.
Vaccination.

Medico-Chirurgical Hospital, twenty-seven months, to be distributed at the Student's own discretion over the last four years of his study. The Candidate may substitute for nine months of this Hospital Attendance six months as a Resident Pupil. He will be required to present a certificate of having taken notes of at least six Medical and six Surgical cases recorded under the supervision respectively of a Physician and of a Surgeon of his Hospital.

Three months' study of Fever—which may be included in his twenty-seven months' Hospital Attendance—in a Hospital containing Fever Wards, and having taken notes of at least five cases of Fever.

Six months' Practical Midwifery and Diseases of Women during the Winter or Summer of the third or the fourth year, at a recognised Lying-in Hospital or Maternity.

Three months' Practical Pharmacy, in a recognised Clinical Hospital or a recognised School of Pharmacy, or a year in the Compounding Department of a Licentiate Apothecary or a Pharmaceutical Chemist.

Each Candidate, before receiving his Diploma, must produce evidence that he has attained the age of twenty-one years.

Licentiates of this Hall are entitled to enter as Candidates for the Fellowship of the Edinburgh Royal College of Surgeons.

EXAMINATIONS FOR THE DIPLOMA.

All information relative to the Examinations may be obtained from the Registrar of the Apothecaries' Hall, 40 Mary Street, Dublin.

Dental Education and Examinations in Ireland.

UNIVERSITY OF DUBLIN.

DEGREE AND LICENSE IN DENTAL SCIENCE.

The University of Dublin grants both a Degree and a License in Dental Science. To obtain the former, Candidates must have

taken a Degree in Arts ; the License is awarded to duly qualified persons who have passed the Public Entrance Examination of Trinity College, Dublin, and a Junior Freshman Term Examination, or who have passed the Special Preliminary Examination.

LICENSE IN DENTAL SCIENCE.

(*L. Dent. Sc., Univ. Dub.*)

Before passing the above-named Examinations in Trinity College, or immediately after doing so, Students are advised to begin their three years' Course of instruction in *Dental Mechanics*, and to devote all their time during one year to this subject. Dental Mechanics may be learnt in the Mechanical Department of the Dental Hospital, where a Fee of £100 is charged, or from a Registered Dentist, in which case the Fee charged is a matter of arrangement.

Having passed the Examinations in Trinity College, as indicated above, Students should matriculate as Dental Students at the Registrar's Office in the Medical School, and commence the prescribed course of study, of which particulars may be obtained from the Registrar of the School of Physic in Ireland, in addition to continuing their work in Dental Mechanics.

DEGREE IN DENTAL SCIENCE.

(*M. Dent. Sc., Univ. Dub.*)

The Course of study recommended in the case of Candidates for the Degree in Dental Science is the same as that for the Licence, with the addition of—

Pathology Lectures	£2	2	0
Pathology, Practical	2	2	0
Bacteriology	3	3	0
	£7	7	0

which should be taken out in the fourth or fifth year.

Before presenting themselves for the Final Examination for the Degree, Candidates must—(1) have passed the Examination for the B.A. Degree ; (2) have attended satisfactorily the Courses indicated above ; and (3) must have had their names on the books either of the Medical School or of the Dental School, for a period of not less than five years. They must also have passed the Previous Dental Examination in all its parts, and have attained the age of twenty-one years.

The subjects for the Degree Examination are—

Medicine.
Surgery.
Pathology.
Bacteriology.
Dental Anatomy, Human and Comparative.
Dental Microscopy.
Dental Surgery and Pathology.
Dental Mechanics.
Orthodontia.

The fee for the Examination is £5. The fee for the Degree is £10.

Examinations will be held on Nov. 15, 1909; March 7, June 13, 1910. Notice must be given to the Registrar of the School of Physic not later than a week before the Examination begins.

The Board of Trinity College is willing to consider applications, on the part of qualified practitioners and others, for recognition of Courses taken previous to the establishment of the Degree and Licence, in case they proceed to complete the Course.

ROYAL COLLEGE OF SURGEONS IN IRELAND.

DIPLOMA IN DENTAL SURGERY.

The Royal College of Surgeons in Ireland grants Diplomas in Dental Surgery under conditions of which the following is a synopsis:—

The Candidate must be twenty-one years of age before being admitted to the Final part of the Examination.

The Candidate must have passed three Examinations.

1. Preliminary (identical with the Medical Preliminary).
2. Primary Dental. Fee, £10 10s. (This Examination is much the same as the Second Conjoint Professional.)
3. Final Dental Examination. Fee, £10 10s. Candidates are examined in Dental Surgery and Pathology, and in Dental Mechanics, including the Metallurgy of the workshop.

   Candidates are required to do gold fillings, and construct mechanical work in the presence of the Examiners.

The Certificates required may be divided into General and Special.

1. The General Certificates required are about the same as those required by the Medical Student for the Second Conjoint Professional Examination.

The Special Certificates may be subdivided into—

1. Dental Hospital. 2. Practical Mechanical Dentistry.

1. Dental Hospital. Two years' attendance, with Lectures in Dental Surgery and Pathology and in Dental Mechanics. Fee, £28 7s.

2. Practical Mechanical Dentistry. Three years' instruction from a Registered Dentist. The fee for this is variable, but may be set down at from £50 to £150.

Large reductions in the Special Certificates required are made in the cases of qualified Medical Practitioners.[a]

As regards Dental Hospital practice, full information is contained in the Calendar for 1909-10 of the School of Dentistry in connection with the Incorporated Dental Hospital of Ireland, Lincoln Place, Dublin. The Calendar may be obtained on application to the Dean, Dr. A. W. W. Baker.

[a] Fuller particulars can be obtained by application to the Registrar, Royal College of Surgeons, St. Stephen's Green, Dublin.

RETIREMENT OF PROFESSOR CLELAND.

In view of the retirement of Professor John Cleland, M.D., F.R.S., from the Chair of Anatomy at the end of the present month, there has been set on foot, on the initiative of the Business Committee of the General Council of the University of Glasgow, a movement for making appropriate recognition of his long and distinguished services. A circular has been issued to the whole body of University Graduates and to members of other learned bodies with which Professor Cleland is or has been connected, bearing the signatures of the Earl of Glasgow, the Lord Provost of Glasgow, Sir John Stirling Maxwell, Bart.; Sir James Fleming, Professor John Glaister, M.D.; Sir Hector C. Cameron, M.D.; the Rev. Dr. John Smith, and Principal J. Yule Mackay. In the circular it is stated that the form of recognition will, to a large extent, depend on the amount subscribed, but it is thought that it might fitly include the provision of some fund for the advancement of anatomical and anthropological science, and the presentation to the University of his portrait or bust by an eminent artist. A very representative Committee has been formed, andthe preliminary list of subscriptions, annexed to the circular, shows that the movement has already met with a very appreciative response. Those desiring to take part in the Recognition are invited to communicate with Mr. Archibald Craig, LL.B., 149 West George Street, Glasgow, the Clerk of the University General Council, who is acting as Secretary and Treasurer.

SANITARY AND METEOROLOGICAL NOTES.

Vital Statistics.

For four weeks ending Saturday, August 14, 1909.

IRELAND.

The average annual death-rate represented by the deaths—exclusive of deaths of persons admitted into public institutions from without the respective districts—registered in the week ended August 14, 1909, in the Dublin Registration Area and the twenty-one principal provincial Urban Districts of Ireland was 14.0 per 1,000 of their aggregate population, which for the purposes of these returns is estimated at 1,142,308. The deaths registered in each of the four weeks ended Saturday, August 14, and during the whole of that period in the several districts, alphabetically arranged, correspond to the following annual rates per 1,000. In some cases, owing to deaths not having been registered within the week in which they occurred, the rates do not fairly represent the weekly mortality :—

Towns, &c.	Week ending				Average Rate for 4 weeks	Towns, &c.	Week ending				Average Rate for 4 weeks
	July 24	July 31	Aug. 7	Aug. 14			July 24	July 31	Aug. 7	Aug. 14	
Town	14.5	15.4	15.8	14.0	14.9	Lisburn -	31.8	18.2	27.3	9.1	21.6
istricts											
magh -	6.9	6.9	6.9	20.6	10.3	Londonderry	12.1	23.0	14.5	13.3	15.7
lymena	19.2	23 9	9.6	—	13.2	Lurgan -	4.4	4.4	8.9	22.1	10.0
lfast -	15.2	13.1	14.6	14.2	14.3	Newry -	12.6	8.4	8.4	8.4	9.5
nmel -	10.3	—	5.1	15.4	7.7	Newtownards	22.9	11.4	11.4	28.6	18.6
k -	17.1	14.4	26.0	15.8	18.3	Portadown -	15.5	20.7	15.5	15.5	16.8
ghеda -	12.3	12.3	24.5	20.4	17.4	Queenstown	13.2	6.6	39.6	6.6	16.5
blin - (. Area)	14.4	17.4	15.2	13.5	15.1	Sligo -	19.2	4.8	14.4	9.6	12.0
ndalk -	4.0	19.9	23.9	—	12.0	Tralee -	—	21.1	10.6	—	7.9
way -	31.1	35.0	23.3	38.8	32.0	Waterford -	9.7	17.5	13.6	23.4	16.0
kenny -	9.8	9.8	9.8	14.7	11.0	Wexford -	14.0	23.3	9.3	4.7	12.8
erick -	8.2	12.3	15.0	10.9	11.6						

The deaths (including those of persons admitted into public institutions from without the respective districts) from certain epidemic diseases registered in the 22 districts during the week ended Saturday, August 14, 1909, were equal to an annual rate of 1.3 per 1,000, the rates varying from 0.0 in thirteen of the districts to 9.7 in Waterford—the 12 deaths from all causes for that district including 2 from whooping-cough and 3 from diarrhœal diseases. Among the 105 deaths from all causes registered in Belfast are one from diphtheria and 3 from diarrhœal diseases. Of the 23 deaths from all causes registered in Cork one is from enteric fever and one from diarrhœa. One death from diphtheria is included among the 8 deaths from all causes registered in Limerick, and one death from diphtheria is also included among the 10 deaths from all causes registered in Galway. Included in the 5 deaths from all causes registered in Lurgan is one from scarlet fever, and of the 3 deaths from all causes registered in Armagh one is from diphtheria.

DUBLIN REGISTRATION AREA.

The Dublin Registration Area consists of the City of Dublin as extended by the Dublin Corporation Act, 1900, together with the Urban Districts of Rathmines, Pembroke, Blackrock, and Kingstown. The population of this area is 398,356, that of the City being 306,902, Rathmines 36,567, Pembroke 28,506, Blackrock 8,759, and Kingstown 17,622.

In the Dublin Registration Area the births registered during the week ended Saturday, August 14, 1909, amounted to 292—143 boys and 149 girls; and the deaths to 113—56 males and 57 females.

DEATHS.

The deaths registered represent an annual rate of mortality of 14.8 in every 1,000 of the population. Omitting the deaths (numbering 10) of persons admitted into public institutions from localities outside the Area, the rate was 13.5 per 1,000. During the thirty-two weeks, ending with Saturday, August 14, the death-rate averaged 23.0, and was 2.0 below the mean rate for the corresponding portions of the ten years 1899–1908.

The 113 deaths from all causes include one death from measles, 2 deaths from whooping-cough, and 9 deaths from diarrhœal diseases. In the three preceding weeks, deaths from measles

had been 0, 4, and one; deaths from whooping-cough had been 2, 4, and 4; and deaths from diarrhœal diseases had been 4, 5, and 5.

There was one death each from lobar pneumonia and *pneumonia* (not defined).

Deaths from all forms of tuberculous disease, which in the three preceding weeks numbered 29, 23, and 20 deaths, respectively, fell to 19 during the week ended Saturday, August 14, the latter including 9 deaths from tubercular phthisis (*phthisis*), 5 from tubercular meningitis, one from tubercular peritonitis, and 4 from other forms of tuberculous disease.

There were 5 deaths from carcinoma, and one death from cancer (undefined).

The deaths of 2 infants, prematurely born, were registered.

To diseases of the brain and nervous system 9 deaths were ascribed, 4 being those of infants under one year of age from *convulsions*.

Diseases of the heart and blood vessels caused the deaths of 19 persons, and there were 9 deaths from bronchitis.

Of 3 accidental deaths, 2 were caused by drowning and one (that of a child aged 1½ years) was caused by opium poisoning.

In four instances the cause of death was "uncertified," there having been no medical attendant during the last illness. These cases include the deaths of 3 infants under one year of age.

Forty-one of the persons whose deaths were registered during the week were under 5 years of age (33 being infants under one year, of whom 11 were under one month old) and 27 were aged 60 years and upwards, including 14 persons aged 70 and upwards, of whom 3 were octogenarians, and one (a female) was stated to have been aged 94 years.

The Registrar-General points out that the names of the cause of death printed above in italics should be avoided whenever possible in Medical Certificates of the Cause of Death.

STATE OF INFECTIOUS DISEASE IN THE DUBLIN REGISTRATION AREA AND IN BELFAST.

The usual returns of the number of cases of infectious diseases notified under the "Infectious Diseases (Notification) Act, 1889," as set forth in the following table, have been furnished by Sir Charles A. Cameron, C.B., M.D., Medical Superintendent Officer of Health for the City of Dublin; Mr. Fawcett, Executive Sanitary

Officer for Rathmines and Rathgar Urban District; Mr. Manly, Executive Sanitary Officer for Pembroke Urban District; Mr. Heron, Executive Sanitary Officer for Blackrock Urban District; Dr. R. A. O'Donovan, Medical Superintendent Officer of Health for Kingstown Urban District; and Dr. Bailie, Medical Superintendent Officer of Health for the City of Belfast.

TABLE SHOWING THE NUMBER OF CASES OF INFECTIOUS DISEASES notified in the Dubli Registration Area (viz.—the City of Dublin and the Urban Districts of Rathmine and Rathgar, Pembroke, Blackrock, and Kingstown), and in the City of Belfast during the week ended August 14, 1909, and during each of the preceding thre weeks. An asterisk (*) denotes that the disease in question is not notifiable in th District.

CITIES AND URBAN DISTRICTS	Week ending	Small-pox	Measles	Rubella, or Epidemic Rose Rash	Scarlet Fever	Typhus	Relapsing Fever	Diphtheria	Membranous Croup	Pyrexia (origin uncertain)	Enteric or Typhoid Fever	Erysipelas	Puerperal Fever	Varicella	Whooping-cough	Cerebro-spinal Fever	Total
City of Dublin	July 24	-	0	0	9	-	-	6	-	1	11	4	-	0	0	0	31
	July 31	-	0	0	8	-	-	8	-	1	4	6		*	*	-	27
	Aug. 7	-	*	*	4	-	-	10	-	1	11	5	-	*	*	-	31
	Aug. 14	-	*	*	5	-	-	3	-	1	6	10	-	*	0	-	25
Rathmines and Rathgar Urban District	July 24	-	0	0	6	-	-	-	-	-	-	-	-	0	0	*	6
	July 31	-	*	*	5	-	-	-	-	-	-	-	-	0	*	0	5
	Aug. 7	-	0	*	6	-	-	1	-	-	-		-	*	*	0	7
	Aug. 14	-	*	*	1	-	-	1	-	-	-		-	0	*	*	1
Pembroke Urban District	July 24	-	4	-	1	-	-	1	-	-	-	1		*	-	-	7
	July 31	-	3	-	1	-	-		-	-	-			*	1	-	
	Aug. 7	-	-	-	3	-	-	-	-	-	-	-	-	*	-	-	
	Aug. 14	-	-	-	2	-	-	1	-	-	-	-	-	*	-	-	
Blackrock Urban District	July 24	-	*	0	-	-	-	-	-	-	-	-	-	*	*	-	
	July 31	-	0	*	-	-	-	-	-	-	-	-	-	*	*	-	
	Aug. 7	-	*	*	-	-	-	-	-	-	-	-	-	*	0	-	
	Aug. 14	-	*	*	-	-	-	-	-	-	-	-	-	*	*	-	
Kingstown Urban District	July 24	-	*	*	-	-	-	-	-	-	-	1	-	0	*	-	
	July 31	-	*	*	-	-	-	-	-	-	-	-	-	0	*	-	
	Aug. 7	-	*	*	-	-	-	-	-	-	-	-	-	*	*	-	
	Aug. 14	-	*	*	-	-	-	-	-	-	-	-	-	*	*	0	
City of Belfast	July 24	-	*	*	4	-	-	6	-	-	1	7	-	*	*	-	1
	July 31	-	0	*	1	-	-	17	1	1	2	3	-	*	*	-	1
	Aug. 7	-	0	*	1	-	-	10	-	-	-	3	-	*	*	-	1
	Aug. 14	-	0	0	3	-	-	4	-	-	-	2	1	0	0	-	1

CASES OF INFECTIOUS DISEASES UNDER TREATMENT IN DUBLIN HOSPITALS.

During the week ended August 14, 1909, 3 cases of measles were admitted into hospital, 4 were discharged, and 22 cases remained under treatment at its close.

Six cases of scarlet fever were admitted to hospital, 14 were discharged, and 84 cases remained under treatment at the close

of the week. This number is exclusive of 21 convalescents from the disease under treatment in Beneavin, Glasnevin, the Convalescent Home of Cork Street Fever Hospital.

Two cases of typhus remained under treatment in hospital at the end of the week.

Seven cases of diphtheria were admitted to hospital, 5 were discharged, and 27 patients remained under treatment at the close of the week.

Five cases of enteric fever were admitted to hospital, 8 were discharged, and 36 cases remained under treatment in hospital at the close of the week.

In addition to the above-named diseases, 5 cases of pneumonia were admitted to hospital, 3 were discharged, there was one death, and 16 cases remained under treatment at the end of the week.

ENGLAND AND SCOTLAND.

The mortality in the week ended Saturday, August 14, in 76 large English towns, including London (in which the rate was 11.3), was equal to an average annual death-rate of 11.5 per 1,000 persons living. The average rate for 8 principal towns of Scotland was 12.6 per 1,000, the rate for Glasgow being 12.9 and for Edinburgh 11.3.

INFECTIOUS DISEASE IN EDINBURGH.

The Registrar-General has been favoured by A. Maxwell Williamson, M.D., B.Sc., Medical Officer of Health for Edinburgh, with a copy of his Return of Infectious Diseases notified during the week ended August 14. From this report it appears that of a total of 42 cases notified, 20 were of scarlet fever, 12 of phthisis. 5 of diphtheria, and 5 of erysipelas.

Among the 380 cases of infectious diseases in hospital at the close of the week were 176 cases of scarlet fever, 64 of measles, 48 of phthisis, 32 of whooping-cough, 32 of diphtheria, 5 of enteric fever, 6 of erysipelas, 2 of cerebro-spinal fever, 2 of puerperal fever, and one of chicken pox.

Vital Statistics

For four weeks ending Saturday, September 11, 1909.

IRELAND.

The average annual death-rate represented by the deaths—exclusive of deaths of persons admitted into public institutions from without the respective districts—registered in the week ended September 11, 1909, in the Dublin Registration Area and the twenty-one principal provincial Urban Districts of Ireland was 17.8 per 1,000 of their aggregate population, which for the purposes of these returns is estimated at 1,142,308. The deaths registered in each of the four weeks ended Saturday, September 11, and during the whole of that period in the several districts, alphabetically arranged, correspond to the following annual rates per 1,000. In some cases, owing to deaths not having been registered within the week in which they occurred, the rates do not fairly represent the weekly mortality :—

Towns, &c.	Week ending				Average Rate for 4 weeks	Towns, &c.	Week ending				Average Rate for 4 weeks
	Aug. 21	Aug. 28	Sept. 4	Sept. 11			Aug. 21	Aug. 28	Sept. 4	Sept. 11	
22 Town Districts	16.2	18.1	16.8	17.8	17.2	Lisburn -	9.1	18.2	18.2	13.6	14.8
Armagh -	6.9	—	6.9	6.9	5.2	Londonderry	19.3	18.1	15.7	8.5	15.4
Ballymena	4.8	19.2	9.6	28.7	15.6	Lurgan -	8.9	13.3	8.9	8.9	10.0
Belfast -	15.6	17.4	16.1	16.7	16.5	Newry -	8.4	8.4	16.8	29.4	15.8
Clonmel -	—	25.6	5.1	10.3	10.3	Newtownards	5.7	11.4	17.2	22.9	14.3
Cork -	8.9	18.5	21.9	26.7	19.0	Portadown	25.8	5.2	—	5.2	9.
Drogheda -	8.2	8.2	4.1	20.4	10.2	Queenstown	—	6.6	19.8	6.6	8.3
Dublin (Reg. Area) -	19.8	20.4	19.0	16.8	19.0	Sligo -	19.2	24·0	9.6	14.4	16.8
Dundalk -	23.9	16.0	4.0	23.9	17.0	Tralee -	21.1	5.3	26.4	37.0	22.
Galway -	23.3	23.3	3.9	23.3	18.4	Waterford	19.5	25·3	25.3	31.2	25.
Kilkenny -	—	14.7	4.9	4.9	6.1	Wexford -	9.3	4.7	14.0	28.0	14.
Limerick -	13.7	16.4	17.8	20.5	17.1						

The deaths (including those of persons admitted into public institutions from without the respective districts) from certain epidemic diseases registered in the 22 districts during the week ended Saturday, September 11, 1909, were equal to an annual rate of 2.9 per 1,000, the rates varying from 0.0 in fourteen of the districts to 9.7 in Waterford—the 16 deaths from all causes for that district including one from whooping-cough and 4 from diarrhœal diseases. Among the 124 deaths from all causes registered in Belfast are 5 from whooping-cough, 2 from diphtheria and 16 from diarrhœal diseases. Of the 39 deaths from all causes registered in Cork one is from diphtheria and 7 are from diarrhœal diseases. Two deaths from whooping-cough and one from diarrhœa are included among the 15 deaths from all causes registered in Limerick.

DUBLIN REGISTRATION AREA.

The Dublin Registration Area consists of the City of Dublin as extended by the Dublin Corporation Act, 1900, together with the Urban Districts of Rathmines, Pembroke, Blackrock, and Kingstown. The population of this area is 398,356, that of the City being 306,902, Rathmines 36,567, Pembroke 28,506, Blackrock 8,759, and Kingstown 17,622.

In the Dublin Registration Area the births registered during the week ended Saturday, September 11, 1909, amounted to 226—108 boys and 118 girls ; and the deaths to 134—63 males and 71 females.

DEATHS.

The deaths registered represent an annual rate of mortality of 17.5 in every 1,000 of the population. Omitting the deaths (numbering 6) of persons admitted into public institutions from localities outside the Area, the rate was 16.8 per 1,000. During the thirty-six weeks, ending with Saturday, September 11, the death-rate averaged 22.6, and was 2.2 below the mean rate for the corresponding portions of the ten years 1899–1908.

The 134 deaths from all causes include 2 deaths from measles, one death each from whooping-cough and diphtheria, 2 deaths from enteric fever, and 15 deaths from diarrhœal diseases. In the three preceding weeks, deaths from measles had been 0, 0, and 0 ; deaths from whooping-cough had been one, 5, and 0 ; deaths from diphtheria had been one, one, and 3 ; deaths from enteric fever had been 0, one and one ; and deaths from diarrhœal diseases had been 20, 30, and 20.

There was one death from broncho-pneumonia and 5 deaths were from *pneumonia* (not defined).

Deaths from all forms of tuberculous disease, which in the three preceding weeks numbered 25, 34, and 24 respectively, fell to 21 during the week ended Saturday, September 11, the latter including 20 deaths from tubercular phthisis (*phthisis*), and one from tubercular meningitis.

There were 5 deaths from carcinoma, and 4 deaths from cancer (undefined).

The deaths of 6 infants, prematurely born, were registered.

To diseases of the brain and nervous system 3 deaths were ascribed.

Diseases of the heart and blood vessels caused the deaths of 20 persons, and there were 10 deaths from bronchitis.

There were 3 accidental deaths (including one of an infant, caused by overlaying), and there was one suicidal death.

In five instances the cause of death was "uncertified," there having been no medical attendant during the last illness. These cases include the deaths of 3 infants under one year of age and the deaths of 2 persons aged 60 years and upwards.

Thirty-eight of the persons whose deaths were registered during the week were under 5 years of age (30 being infants under one year, of whom 10 were under one month old) and 37 were aged 60 years and upwards, including 20 persons aged 70 and upwards, of whom 9 were octogenarians.

The Registrar-General points out that the names of the cause of death printed above in italics should be avoided whenever possible in Medical Certificates of the Cause of Death.

STATE OF INFECTIOUS DISEASE IN THE DUBLIN REGISTRATION AREA AND IN BELFAST.

The usual returns of the number of cases of infectious diseases notified under the "Infectious Diseases (Notification) Act, 1889," as set forth in the following table, have been furnished by Sir Charles A. Cameron, C.B., M.D., Medical Superintendent Officer of Health for the City of Dublin; Mr. Fawcett, Executive Sanitary Officer for Rathmines and Rathgar Urban District; Mr. Manly, Executive Sanitary Officer for Pembroke Urban District; Mr. Heron, Executive Sanitary Officer for Blackrock Urban District; Dr. R. A. O'Donovan, Medical Superintendent Officer of Health for Kingstown Urban District; and Dr. Bailie, Medical Superintendent Officer of Health for the City of Belfast.

ABLE SHOWING THE NUMBER OF CASES OF INFECTIOUS DISEASES notified in the Dublin Registration Area (viz.—the City of Dublin and the Urban Districts of Rathmines and Rathgar, Pembroke, Blackrock, and Kingstown), and in the City of Belfast, during the week ended September 11, 1909, and during each of the preceding three weeks. An asterisk (*) denotes that the disease in question is not notifiable in the District.

CITIES AND URBAN DISTRICTS	Week ending	Small-pox	Measles	Rubella, or Epidemic Rose Rash	Scarlet Fever	Typhus	Relapsing Fever	Diphtheria	Membranous Croup	Pyrexia (origin uncertain)	Enteric or Typhoid Fever	Erysipelas	Puerperal Fever	Varicella	Whooping-cough	Diarrhœal Diseases	Total
ity of Dublin	Aug. 21	-	*	*	7	-	-	5	-	2	7	12	-	*	*	*	33
	Aug. 28	-	*	*	12	-	-	8	-	1	7	5	-	*	*	*	33
	Sept. 1		*	*	5	-	-	6	-	1	9	6	-	*	*	*	27
	Sept. 11	-	*	*	5	-	-	4	-	3	15	8	-	*	*	*	35
athmines and Rathgar Urban District	Aug. 21	-	*	*	3	-	-	2	-	-	-	-	-	*	*	-	5
	Aug. 28	-	*	*	3	-	-	1	-	-	1	-	-	*	*	3	11
	Sept. 1	-	*	*	2	-	-	4	-	-	-	1	-	*	*	1	7
	Sept. 11	-	*	*	5	-	-	-	-	-	-	2	-	*	*	3	10
embroke Urban District	Aug. 21	-	-	-	1	-	-	-	-	-	-	1	-	*	*	*	2
	Aug. 28	-	-	-	-	-	-	-	-	-	1	2	-	*	*	*	3
	Sept. 1	-	-	-	1	-	-	2	-	-	1	-	-	1	4	*	8
	Sept. 11	-	-	-	2	-	-	-	-	-	-	-	-	*	*	*	2
ackrock Urban District	Aug. 21	-	*	*	-	-	-	-	-	-	-	-	-	*	*	*	-
	Aug. 28	-	*	*	-	-	-	-	-	-	-	-	-	*	*	*	-
	Sept. 1	-	*	*	-	-	-	-	-	-	-	-	-	*	*	*	-
	Sept. 11	-	*	*	-	-	-	-	-	-	-	-	-	*	*	*	-
ngstown Urban District	Aug. 21	-	*	*	-	-	-	-	-	-	-	-	-	*	*	*	-
	Aug. 28	-	*	*	-	-	-	-	-	-	-	-	-	*	*	*	-
	Sept. 1	-	*	*	-	-	-	-	-	-	-	-	-	*	*	*	-
	Sept. 11	-	*	*	-	-	-	-	-	-	-	-	-	*	*	*	-
y of Belfast	Aug. 21	-	*	*	4	-	-	2	-	1	2	12	-	*	*	*	11
	Aug. 28		*	*	4	-	-	3	-	-	1	10	-	*	*	*	18
	Sept. 1	-	*	*	6	-	-	3	-	-	-	8	-	*	*	*	17
	Sept. 11	-	*	*	11	2		3	1	-	-	1	-	*	*	*	18

CASES OF INFECTIOUS DISEASES UNDER TREATMENT IN DUBLIN HOSPITALS.

During the week ended September 11, 1909, one case of measles was admitted into hospital, 3 were discharged, there were 2 deaths, and 10 cases remained under treatment at its close.

Eleven cases of scarlet fever were admitted to hospital, 17 were discharged, and 67 cases remained under treatment at the close of the week. This number is exclusive of 12 convalescents from the disease under treatment in Beneavin, Glasnevin, the Convalescent Home of Cork Street Fever Hospital.

Two cases of typhus remained under treatment in hospital at the end of the week.

Three cases of diphtheria were admitted to hospital, 7 were

discharged, and 35 patients remained under treatment at the close of the week.

Twelve cases of enteric fever were admitted to hospital, 4 were discharged, there was one death, and 38 cases remained under treatment in hospital at the close of the week.

In addition to the above-named diseases, 10 cases of pneumonia were admitted to hospital, 2 were discharged, there were 3 deaths, and 18 cases remained under treatment at the end of the week.

ENGLAND AND SCOTLAND.

The mortality in the week ended Saturday, September 11, in 76 large English towns, including London (in which the rate was 12.3), was equal to an average annual death-rate of 12.8 per 1,000 persons living. The average rate for 8 principal towns of Scotland was 12.3 per 1,000, the rate for Glasgow being 13.0 and for Edinburgh 10.0.

INFECTIOUS DISEASE IN EDINBURGH.

The Registrar-General has been favoured by A. Maxwell Williamson, M.D., B.Sc., Medical Officer of Health for Edinburgh, with a copy of his Return of Infectious Diseases notified during the week ended September 11. From this report it appears that of a total of 82 cases notified, 48 were of scarlet fever, 14 of phthisis, 11 of diphtheria, 7 of erysipelas, one of enteric fever, and one of cerebro-spinal fever.

Among the 364 cases of infectious diseases in hospital at the close of the week were 192 cases of scarlet fever, 46 of measles, 43 of phthisis, 19 of whooping-cough, 36 of diphtheria, 11 of enteric fever, 6 of erysipelas, 2 of chicken-pox, and one of cerebro-spinal fever.

W. E. A. Moore, M.A.

Meteorology.

Abstract of Observations made in the City of Dublin, Lat. 53° 20′ N., Long. 6° 15′ W., for the Month of August, 1909.

Mean Height of Barometer, - -	30.002 inches
Maximal Height of Barometer (11th, at 9 a.m.),	30.330 ,,
Minimal Height of Barometer (23rd, at 9 a.m.).	29.518 ,,
Mean Dry-bulb Temperature, - -	59.0°.
Mean Wet-bulb Temperature, - -	56.4°.
Mean Dew-point Temperature, - -	54.0°.
Mean Elastic Force (Tension) of Aqueous Vapour,	.422 inch.
Mean Humidity, - - - -	84.0 per cent.
Highest Temperature in Shade (on 12th), -	77.1°.
Lowest Temperature in Shade (on 30th), -	45.5°.
Lowest Temperature on Grass (Radiation), (30th),	41.9°.
Mean Amount of Cloud, - - -	57.3 per cent.
Rainfall (on 13 days), - - -	1.300 inches.
Greatest Daily Rainfall (on 21st), - -	.367 inch.
General Directions of Wind, - - -	W., S.W.

Remarks.

The cool, cloudy and showery period which succeeded the sunny weather of late spring at the summer solstice passed with July, and the warm, dry weather in the early part of the month was all that could be desired. The hot sunshine was tempered by an easterly sea breeze, which came in along the east coast each day. The 11th, 12th, 14th, and 15th days were very warm. On the 12th, temperature at Fitzwilliam Square rose to 77.1°, the highest reading at that station since July, 17, 1907, when the value was 77.3°. After a fortnight of true summer, the weather became changeable and comparatively cool. Thunderstorms occurred on both the 15th and the 21st. On the latter day the thunder and lightning were accompanied by heavy rain and hail. The rainfall accounted to that day was the largest during the month in Dublin and the southern portions of the county. Although many of the succeeding days were fine, the temperature remained low, and on only one occasion after the 19th—namely, the 28th—did the thermometers exceed the mean maximum temperature of August, 1908 (65.0°). On the last day of the month, the highest reading was 58.2°.

In Dublin the arithmetical mean temperature (60.0°) was above

the average (59.7°); the mean of the dry-bulb readings at 9 a.m. and 9 p.m. was 59.0°. In the forty-five years ending with 1909, August was coldest in 1881 (M. T. = 57.0°), and warmest in 1899 (M. T. = 63.4°). In 1906 the M. T. was 63.2°; in 1907 it was 58.8°; and in 1908 it was 59.1°.

The mean height of the barometer was 30.002 inches, or 0.105 inch above the corrected average value for August—namely 29.897 inches. The mercury rose to 30.330 inches at 9 a.m. of the 11th, and fell to 29.518 inches at 9 a.m. of the 23rd. The observed range of atmospheric pressure was, therefore, 0.812 inch.

The mean temperature deduced from daily readings of the dry-bulb thermometer at 9 a.m. and 9 p.m. was 59.0°. It was 0.7° above the value for July, 1909. Using the formula, *Mean Temp.* = *Min.* + (*Max.* — *Min.*) × .47, the mean temperature was 59.6°, or 0.3° above the average mean temperature for August, calculated in the same way, in the thirty-five years 1871–1905, inclusive (59.3°). The arithmetical mean of the maximal and minimal readings was 60.0°, compared with a thirty-five years' average of 59.7°. On the 12th, the thermometer in the screen rose to 77.1°—wind, S.W.; on the 30th, the temperature fell to 45.5°—wind, W. The minimum on the grass was 41.9° on the 30th.

The rainfall was 1.300 inches on 13 days. The average rain fall for August in the thirty-five years 1871–1905, inclusive, was 3.24 inches, and the average number of rainy days was 18. The rainfall, therefore, and the rain-days were decidedly below the average. In 1900 the rainfall in August was very large—5.871 inches on 17 days; in 1889, also, 5.747 inches were registered on 22 days. On the other hand, in 1884, only .777 inch was measured on 8 days. August, 1905, established a record for rainfall in this month in Dublin, for the measurement was 7.019 inches on 22 days, 3.436 inches having fallen on the 25th. In 1908 the rainfall was 3.435 inches on 15 days.

High wind was noted on one day, but it did not attain the force of a gale (8). Temperature reached 70° in the screen on 6 days, compared with 7 days in August, 1901, only one day in both 1902 and 1903, 9 days in 1904, one day in 1905, 17 days in 1906, one day in 1907, and 3 days in 1908. A solar halo was seen on the 17th. Hail fell on the 21st. Thunderstorms occurred on the 15th and 21st.

The rainfall in Dublin during the eight months ending August

31st amounted to 16.677 inches on 119 days, compared with 17.244 inches on 135 days in 1908, 16.588 inches on 146 days in 1907, 15.425 inches on 139 days in 1906, 18.041 inches on 131 days in 1905, 16.808 inches on 135 days in 1904, 21.872 inches on 157 days in 1903, 18.456 inches on 133 days in 1902, 14.384 inches on 106 days in 1901, 9.455 inches on 96 days during the same period in 1887, and a thirty-five years' average (1871–1905) of 17.950 inches on 131 days.

At the Normal Climatological Station in Trinity College, Dublin, Mr. William J. Good reports that the mean height of the barometer was 30.003 inches. The range of atmospheric pressure was between 30.325 inches at 9 a.m. of the 11th and 29.531 inches at 9 a.m. of the 23rd. The mean value of the readings of the dry-bulb thermometer at 9 a.m. and 9 p.m. was 59.6°. The arithmetical mean of the daily maximal and minimal temperatures was 60.1°. The screened thermometers rose to 78.2° on the 12th, and fell to 47.0° on the 31st. On the 30th the grass minimum was 39.0°. Rain fell on 12 days to the amount of 1.207 inches, the greatest fall in 24 hours being .390 inch on the 21st. The duration of bright sunshine, according to the Campbell-Stokes recorder, was 157.9 hours, of which 12.3 hours occurred on the 9th. In August, 1904, there were 183.75 hours of bright sunshine; in 1905, 121.9 hours; in 1906, 176.9 hours; in 1907, 151.4 hours; and in 1908, 148.7 hours. The mean earth-temperatures were—at 1 ft., 60.9°; at 4 ft., 58.0°.

According to Mr. Robert O'Brien Furlong, C.B., at Cloneevin, Killiney, Co. Dublin, 0.84 inch of rain fell on 11 days. The maximal fall in 24 hours was 0.25 inch on the 21st. The average rainfall in August of the twenty-four years, 1884–1907, was 3.212 inches on 16.8 days. This is the lowest fall for August recorded at this station, the next lowest rainfall being 1.30 inches on 10 days in 1886. Thunder and lightning occurred on the 21st. Since January 1, 1909, 15.31 inches of rain have fallen at this station on 109 days.

Dr. Christopher Joynt, F.R.C.P.I., returns the rainfall at 21 Leeson Park at 1.315 inches, of which .410 inch fell on the 21st. The rain days were 13. In July, 3.275 inches were recorded at this station on 20 days. The total fall since January 1 amounts to 16.075 inches.

Dr. Arthur S. Goff reports that at Lynton, Dundrum, County Dublin, the rainfall was 1.16 inches on 14 days. The maximal fall in 24 hours was .29 inch on the 21st. The corresponding figures for 1901 were 3.11 inches on 16 days; for 1902, 2.73 inches on 18 days; for 1903, 2.78 inches on 25 days; for 1904, .98 inch on 20 days; for 1905, 9.35 inches on 21 days; for 1906, 1.48 inches on 15 days; for 1907, 2.51 inches on 19 days; and for 1908, 3.73 inches on 17 days. The mean shade temperature was 61.3°, the range being from 78° on the 15th to 47° on the 30th. In August, 1901, the M. T. was 60.5°; in 1902, it was 58.7°; in 1903, 58.6°; in 1904, 60.5°; in 1905, 59.1°; in 1906, 63.6°; in 1907, 59.8°; and in 1908, 60.0°. A thunderstorm was recorded on the 21st.

Mr. T. Bateman reports that the rainfall at The Green, Malahide, Co. Dublin, was 0.736 inch on 12 days; the heaviest fall in 24 hours was .208 inch on the 22nd. In August, 1908, 2.415 inches fell on 14 days, the greatest fall in 24 hours being 1.260 inches on the 20th. The mean shade temperature was 58.7°, the extremes being—highest, 79.0° on the 14th; lowest, 40.5° on the 29th.

According to Mr. R. Cathcart Dobbs, J.P., at Knockdolian, Greystones, Co. Wicklow, the rainfall for August was 0.825 inch on 7 days, compared with 4.120 inches on 10 days in 1908, 1.950 inches on 17 days in 1907, 1.765 inches on 13 days in 1906, 8.915 inches on 22 days in 1905, 2.875 inches on 20 days in 1904, 2.870 inches on 27 days in 1903, 3.520 inches on 16 days in 1902, and 3.625 inches on 15 days in 1901. The heaviest fall in 24 hours was .325 inch on the 17th. The total fall since January 1 amounts to 18.666 inches on 95 days, compared with 18.110 inches on 94 days in 1908, 18.565 inches on 122 days in 1907, 15.455 inches on 99 days in 1906, 21.058 inches on 110 days in 1905, 18.577 inches on 129 days in 1904, 23.100 inches on 134 days in 1903, 23.161 inches on 111 days in 1902, and 19.685 inches on 100 days in 1901.

At Clonsilla, Greystones, Co. Wicklow, Mr. A. Victor Price recorded a rainfall of 0.86 inch distributed over 11 days. The greatest measurement in 24 hours was .29 inch on the 17th. From the 1st to the 16th only .02 inch fell, .01 being recorded both on the 1st and the 13th. Since January 1, the rainfall at Clonsilla, Greystones, was 16.89 inches on 102 days. The mean temperature was 58.6°, the highest being 77.5° on the 14th; the lowest, 44.0° on the 29th.

According to Mr. W. Miller, the rainfall in Cork City was 0.25 inch, or 3.25 inches less than the average, and the rain-days were 7. The greatest fall was 0.08 inch on the 17th. The mean temperature of the month was 59.7°, which is the average. The thermometer rose to 79.0° on the 12th and fell to 43.0° on the 28th and 30th. The rainfall for 1909 up to August 31 was 18.57 inches, compared with an average of 24.11 inches.

The Rev. Arthur Wilson, M.A., returns the rainfall at the Rectory, Dunmanway, Co. Cork, at 0.32 inch on 11 days. The largest measurements in 24 hours were .08 inch on the 29th, .06 inch on the 24th, and .04 inch on the 22nd. At Dunmanway the month was very dry and hot. From the 2nd to the 17th inclusive (16 days) no rain fell. The month was the driest for 5 years and probably the driest since May, 1896, a month of exceptional drought. The average rainfall in August, based on the returns for the last four years, is 5.575 inches.

At the Ordnance Survey Office, Phœnix Park, Dublin, rain fell on 13 days to the amount of 1.363 inches, the largest measurement in 24 hours being .420 inch on the 21st. The total duration of bright sunshine was 163.8 hours, the longest daily spell being 12.8 hours on the 6th. A. R. Moore, M.A.

PERISCOPE.

HOME TREATMENT OF TUBERCULOSIS IN DUBLIN.

The quarterly meeting of the Hospitals' Tuberculosis Committee was held in 76 Grafton Street on Thursday, the 9th Sept. Present:—Her Excellency the Countess of Aberdeen, accompanied by Lady Pentland; Sir Arthur Chance (in the chair), Dr. M. F. Cox, Dr. Alfred Parsons, Dr. G. Peacocke, Dr. T. Percy Kirkpatrick, Dr. J. Lumsden, and Sir William J. Thompson, Hon. Sec. The report of Dr. Daniel, who has been placed by the Women's National Health Association at the disposal of the Committee to attend cases that were receiving no medical aid, was considered most satisfactory. It was felt that in this way a great want was being met. The work done during the last six months by the two Tuberculosis Jubilee Nurses working in Dublin was next reported. Two hundred and forty-seven patients have been attended; of these 125 were old cases and 122 new cases. In all 3,504 visits were paid to the patients' homes. It is a

significant fact that almost two-thirds of the patients themselves seek the nurses' aid. This is not to be wondered at, when it is realised what is done for their patients through the Samaritan Committee, in addition to the actual nursing, help and advice which enable patients to carry out doctors' orders in their own homes. Sixty-three families received nourishment; 39 families received clothes, shoes, bedding, &c.; 10 families' rent were paid while the breadwinner was under special treatment; 87 children of parents suffering from tuberculosis were sent to the country through the Fresh Air Fund; 3 families of children were boarded out while the mothers were in hospital; 60 rooms were disinfected; 5 families were removed to more healthy homes; for 7 patients work has been obtained, and 16 patients had been admitted to Newcastle. There were 66 families occupying one room, and in 35 families more than one member was affected. The total earnings of the families attended when the breadwinner is ill is estimated not to exceed 5s. a week on an average. Mrs. M. A. Sullivan, the Convener of the Samaritan Committee, reported "that £130 had been spent on tuberculosis cases since February, 1908, and that does not include subscriptions collected for some patients for Newcastle. Then a large quantity of clothing was given to patients; beds or beddings were equipped, and, in addition, all the charitable societies were generous in their help." Mrs. Sullivan will gladly receive any help for this good cause. The nurse employed by the Terenure Branch of the Women's National Health Association reports that for four months she attended 22 consumption patients and paid 214 visits. She also has been the means of giving a great deal of assistance to patients in the way of beds, clothes, and nourishment in addition to the ordinary nursing. The three nurses and the doctor remark that patients or their friends ask that their homes be disinfected. This fact, together with that mentioned before, that two-thirds of the patients request the nurses' services, show that the people amongst whom the nurses work are commencing to understand something about the nature of the disease, and are themselves assisting in trying to stamp it out.

VAGINAL ANUS IN THE ADULT, WITH REPORT OF TWO CASES.

At the recent (eleventh) Annual Meeting of the American Proctologic Society Dr. Louis J. Hirschman, M.D., Detroit, Mich., reported two cases of imperforate anus with the anomalous

opening occurring in the lower part of the vagina, both occurring in adults. He successfully operated in both cases, restoring the anal outlet to its normal position, with a good functional result. The first patient was aged twenty-five, unmarried, and until a few months before examination did not know that she was anatomically different from other young women. She was brought up by a maiden aunt, who, while realising that her charge was not normal, felt that as long as she was having regular bowel movements she would put off any operative interference until later in life. The operation in this case consisted in closing the vaginal anal orifice after dissecting the rectum free from the vaginal septum. As an infantile sphincter muscle was present at the normal anal site, an incision was made through the centre of this, and by blunt dissection the tissues between it and the blind end of the rectum were separated. The rectum was then pulled down, opened and sutured to the integument. The perineum was not split open, nor was the sphincter divided. A good functional result followed. His second patient was also unmarried, twenty-three years of age. The case was very similar to Case I., except that there was an over-development of the sphincter vaginæ, which gave her good fæcal control. A small fistula was present connecting the anus and vulva, but not communicating with the rectum. In this case the perineum was split and the fistula dissected out. The vaginal anus was dissected free and brought down to the normal anal site in a manner similar to that pursued in Case I. The perineum was then repaired as in an ordinary perineorrhaphy. The functional result in this case was also good. The author concludes from his experience with these two cases, and realising the very high mortality from operations for imperforate anus in infants, that where there is some abnormal outlet for the fæces present, it is far better to allow patients to go on in their abnormal condition until they grow old enough and strong enough for surgical interference and the correction of nature's failure.

A REVIEW OF PROCTOLOGIC LITERATURE FROM MAY, 1908, TO MAY, 1909.

Dr. Samuel T. Earle, M.D., Baltimore, Md., made a communication, under the above heading, to the Eleventh Annual Meeting of the American Proctologic Society, held at Atlantic City, New Jersey, June 7 and 8, 1909. Among the interesting

conditions referred to in the review by the author were the following :—" Congenital Idiopathic Dilatation of the Colon " (Hirschprung's Disease). In Dr. Finley's report of his case he reviewed the literature of the subject to January 1, 1908, and collected some two hundred and six cases, after which he stated that while to Hirschprung belongs the credit of having first called attention to this disease, a number of cases had been found in the literature antedating his classical description. In the article Dr. Finley discussed the various hypotheses as to the ætiology of the disease and some ten theories, which have been suggested from time to time, as to the causation of the malady, including that of hypernutrition, which was the author's principal theory. His conclusions as to the ætiology of the disease were that no one theory apparently explained every case ; that each one explains some. The symptomatology was described and a complete clinical picture of the disease was given, with a list of a series of cases discussed in the Johns Hopkins Hospital—eleven in all. Regarding the treatment, the author concludes that no one plan seems applicable to all cases, and suggests the method employed in his own case as perhaps the one most applicable to the large proportion of cases—to wit, a preliminary enterostomy—then a colo-colostomy some months subsequently ; finally, a complete excision of the affected portion. This artificial anus is left open until after the success of the proceeding steps are assured, when it should be closed under cocaïn anæsthesia. Dr. Earle, in his report, alluded to another case of " Idiopathic Dilatation of the Rectum and Colon as far as the Hepatic Flexure," which was reported by H. Morely Fletcher, M.D., and H. Betham Robinson, M.S. (*Clinical Society's Transactions*, Vol. XL., p. 80). Another case of interest reported was that of a " Sarcoma of the Rectum in a boy aged ten years," by Cecil Rountree (*Proceedings of the Royal Society of Medicine*, February, 1908). The pathological examination showed the tumour to be a mixed-cell sarcoma. Of five hundred and ninety-six cases analysed in the Cancer Research Laboratory, and reported in the Middlesex Hospital Reports, there were only six cases under thirty years of age—the youngest patient, a boy of sixteen years, had a sarcoma of the rectum. There are likely to be many metastases in sarcoma of the rectum. This malady is rare at any age. Attention was called to the method of Dr. Dudley Roberts, of Brooklyn, N. Y. (*The Medical Record*, Vol. LXXII., p. 985), for " Gradual Painless

Dilatation of the Anal Canal by Dilitable Rubber Bags," which appealed to Dr. Earle forcibly as a very satisfactory means of accomplishing the purpose designed. Attention was also called to the article of Dr. Charles O. Files, of Portland, Maine (*New York Medical Journal*, Vol. LXXXVII., p. 1154), in which he considers that there are two important factors that should be studied in connection with the "Treatment of Pruritus Ani." These are an analysis of the contents of the rectum and the physical condition and mechanical efficiency of the sphincter ani muscles—external and internal. The normal fæces contains about 73 per cent. of water. This water holds in solution various volatile, fatty acids, and probably other irritating excrementitious substances. During the retention of the fæces in the rectum a considerable portion of the water disappears. In prolonged constipation the fæces become hard and dry, some of the fluid passes by osmosis into the cellular tissue about the anus, and thence to the skin. The liquid fæces are very often irritating to the mucous membrane of the anus, and so cause an intense burning sensation. When this acrid solution is absorbed into the cellular tissue, it causes an irritation of the skin, and we call that irritation "pruritus ani." The sphincter muscle, as long as it remains in a normal condition, prevents the passage of any appreciable amount of fluid through it. When, however, the action of the sphincter is made somewhat irregular by the pressure of a hæmorrhoidal condition some of the fluid leaks through the anus and causes pruritus by direct contact. The skin about the anus is often found to be moist in persons having hæmorrhoids. Dr. F. W. Dudley, of Manila, P. I. (*Journal of the American Medical Association*, Vol. LI., p. 991), reports a "New Bloodless Method of Amputating the Anus and Rectum," a description of the same being given. Dr. W. Ernest Miles (*The Lancet*, 1908, Vol. II., p. 1812) reviews the "Perineal Excision for Carcinoma of the Rectum and of the Pelvic Colon," and states that, so far as he has been able to gather from the literature on the subject, the technic of previous operations seems to have failed in one important respect—namely, the complete eradication of the zone of upward spread of cancer from the rectum, whereby the chance of recurrence of the disease above the field of operation can be distinguished, if not entirely obviated. In his personal experience of fifty-seven such peritoneal operations, he found that recurrences took place in periods from six months to three

years in fifty-four instances. In order to ascertain the cause of his failures he made a *post-mortem* examination of those of his patients who died, and found that recurrence appeared in situations which were beyond the scope of removal from the peritoneum—namely, (*a*) the pelvic peritoneum; (*b*) the pelvic mesocolon; and (*c*) the lymph nodes situated over the bifurcation of the left common iliac artery. He considers that this area constitutes the zone of the upward spread of cancer of the rectum, the removal of which is just as imperative as is the thorough clearance of the axilla in cases of cancer of the breast, if freedom from recurrence is to be obtained. The appreciation of this important fact induced him, two years ago, to abandon the perineal methods of excision of the rectum and to substitute therefor an abdominal method, comparable to those methods of performing abdominal hysterectomy known as the Wertheim and the Kronig-Wertheim. He then gives the technic of his operation in full, and has formulated what he considers certain essentials which must be strictly adhered to if satisfactory results are to be obtained—namely (1) that an abdominal anus is a necessity; (2) that the whole of the pelvic colon, with the exception of the part from which the colostomy is made, must be removed, because its blood supply is contained in the zone of the upward spread; (3) that the whole of the pelvic mesocolon below the point where it crosses the common iliac artery, together with a strip of peritoneum, at least an inch wide on either side of it, must be cleared away; (4) that the group of lymph nodes situated over the bifurcation of the common iliac artery are in all instances to be removed; and lastly, (5) that the peritoneal portion of the operation should be carried out as widely as possible, so that the lateral and downward zones of spread may be effectively extirpated. B. G. A. Moynihan, M.D., Leeds, Eng. (*Surgery, Gynecology and Obstetrics*, 1908, Vol. VI., p. 463), calls special attention to the "Frequent Recurrences after Removal of Carcinoma from the Upper Rectum and Sigmoid," and also for the necessity of inguinal colostomy on account of the sacrifice of a large portion of the bowel in perhaps a large majority of cases.

In Memoriam.

ALEXANDER FRASER, M.B., C.M., F.R.C.S.I.

It is with the most profound regret we have to record the death of Alexander Fraser, Professor of Anatomy, Royal College of Surgeons, Ireland, which took place on July 25th, 1909, at his native place, Lossiemouth, Elgin.

Alec Fraser was born in 1853. He received his early education in Lossiemouth, whence he proceeded to Glasgow University, where, as a medical student, he had a most distinguished career.

Amongst other honours he obtained the Medal in Anatomy, and subsequently he graduated as M.B. and C.M. in 1878 with first class honours in medicine. Subsequent to graduation he acted as assistant for some time to the late Professor Allen Thomson, during which time he paid special attention to the study of the development of ova. After this he studied anatomy and embryology under Kölliker, of Würzburg, and His, of Leipzig. The next post he occupied was that of Chief Demonstrator of Anatomy in Owens College, Manchester, where his great abilities as a teacher early manifested themselves. It was during that time he did some excellent embryological work, the results of which were embodied in papers appearing in the "Transactions and Proceedings of the Royal Society."

In 1883 the Chair of Anatomy in the Royal College of Surgeons in Ireland became vacant through the appointment of the late Professor D. J. Cunningham to the corresponding post in Dublin University. Fraser was offered and accepted the vacant chair, into the duties of which he threw himself with indefatigable industry and untiring energy. His selection was amply justified, for the newly-elected Professor soon proved himself to be a teacher and lecturer who had neither rival nor superior. From the outset the Professor's enthusiasm for his work infected the students attending his courses of instruction. His mastery of his subject, the clearness of his diction and the facility with which he illustrated

his lectures on Systematic Anatomy by drawings on the blackboard lent a peculiar charm to his teaching.

The amount of gratuitous and voluntary work done by PROFESSOR FRASER for the members of his classes is known only to those who attended or to those whose privilege it was to be intimately acquainted with him in the school. The student never had a truer friend than FRASER. Advice was never sought from him in vain, and the writer knows of instances in which his purse, too, was freely opened when necessity demanded it. As a disciplinarian FRASER was never stern, and yet the control he exerted over the students was simply marvellous—a fact which must be attributed to the affection in which he was held by every member of his class.

His contributions to anatomy and embryology were numerous, the most important were :—" The Development of the Ossicula Auditus in the Higher Mammalia," *Trans. Roy. Soc.*, 1882 ; " On the Inversion of the Layers of the Blastoderm in the Rat and Mouse," *Proc. Roy. Soc.*, Vol. XXXIV. ; " Photography as an Aid in Morphological Work," *Brit. Assoc. Rep.*, 1889 ; " New Method of Illustrating the Topography of the Brain," *ibid.* ; " Case of Porencephaly," *Journ. Ment. Sci.*, 1894. In 1890 he published his large work, " A Guide to Operations on the Brain." The " Transactions of the Royal Academy of Medicine in Ireland " from year to year contain numerous other papers, the result of his work.

Everything connected with his work was undertaken by FRASER in a truly scientific spirit. Everything he discovered or saw was traced out clearly from its embryological and developmental standpoint until, as he frequently said to the writer, " it was as clear as the light of day." It was in this manner he had recently studied the sympathetic nervous system, the nervous supply of the viscera, and the distribution of the peritoneum. In fact he had, after this manner, completed the study of the entire body, and was about to record the result of his labours in a book when the hand of death was laid upon him. The loss to science, owing to his failure to publish the result of what may be termed his life-work, is as great as his loss as a teacher is to the College.

As a man PROFESSOR FRASER was of a most retiring disposition, averse from all manner of display, while his own high-mindedness and love of honesty and truth led him sometimes to offend where offence would have been avoided by one no less honest, but more diplomatic.

On the completion of his twenty-fifth year as Professor of Anatomy in the College School, the President, on behalf of the College, on the evening of the last annual dinner, presented PROFESSOR FRASER with a cheque enclosed in a suitably inscribed silver casket. At the same time his past and present pupils, together with some of his friends and colleagues, initiated a movement to present him with a testimonial in recognition of their appreciation of his distinguished position as an anatomist, and of his great ability as a teacher, as well as to show their respect and esteem for him as a man and a friend.

His fatal illness took its origin in a neglected attack of influenza, and dates from February last. This left him an easy prey to the tubercle bacillus, which too rapidly accomplished its deadly work. Contrary to the advice of his friends he refused to take rest. It was only sheer physical weakness that compelled him to desist. FRASER therefore fell, like many another good and true man, a martyr to an over-conscientious idea of duty.

His untimely death will be widely and deservedly deplored, and to his devoted widow our heartfelt sympathy is extended.

Dr. A. Francis Dixon, Professor of Anatomy in Trinity College, Dublin, writes in the *British Medical Journal* :—

"In the death of PROFESSOR ALEXANDER FRASER, Dublin has lost the last of the three men who did so much during the past quarter of a century to advance the study of anatomy in her medical schools.

"The names of Birmingham, Cunningham and Fraser will always be honoured, not only in the schools whose interests they so faithfully served, but by all who appreciate and value scientific investigations.

"As a pupil and admirer of the late Professor His, PROFESSOR FRASER was perhaps most deeply interested in the embryological aspect of anatomical science, and in his teaching and conversation he was always careful to emphasise the

embryological point of view. His earlier papers are concerned with developmental problems, and include an important and well known memoir, 'On the Development of the Ossicula Auditus in the Higher Mammalia,' published in the 'Philosophical Transactions of the Royal Society,' and a research 'On the Inversion of the layers of the Blastoderm in the Rat and Mouse.' In later years he devoted much of his time to the study of the nervous system, and published his beautiful 'Guide to Operations on the Brain' in 1890. The plates which illustrate this monograph are of extreme beauty, and are a testimony to his originality, manipulative skill, and tireless energy. These qualities are also manifested by his smaller writings, and in the routine work of his department they gained for him the admiration and esteem of his colleagues and students. In spite of the fact that PROFESSOR FRASER may be said to have lived for his students and for the advancement of his school, he was always most willing to place his advice and knowledge at the service of other workers.

"There are many in Dublin who have availed themselves of his assistance in carrying out anatomical and surgical investigations, and who speak in the warmest terms of his kindness and sympathy and of their indebtedness to him.

"To all who shared his friendship and regard, his death has brought a sense of deep sorrow and irreparable loss."

In the *British Medical Journal* Sir Thornley Stoker also writes :—

"From the time of his appointment as my Co-Professor of Anatomy in the Royal College of Surgeons until my resignation of my Chair in 1889 I was in close daily relation with PROFESSOR FRASER. I had the most intimate means of studying his character and abilities, of learning to appreciate and love his simple and beautiful nature and of growing into increasing respect for the ability, singleness of purpose, and earnestness of a man for whom I had increasing respect and admiration up to the day of his death. He came to Dublin with an anatomical reputation which has grown ever since. He had already published work of a high class, and ever since had been an ardent and enthusiastic worker, and one who showed that high quality of Scottish character which made a

day on which no work was done no day. He was indefatigable. The anatomy of the sympathetic nervous system and that of the peritoneum were, in addition to embryological studies, matters to which he seems to have particularly devoted himself, and it is to be hoped that his material has been left in such a state that it may be preserved and utilised for the science to which his life was devoted. . . .

"With a long experience of teachers, I can remember no man who was more beloved—none with a larger, higher, finer, or more tender influence with young men. He loved them, and they felt and knew it, and responded to it with that secret devotion which is the pride and privilege of generous youth.

"As long as the generations of his pupils live his memory will be personal and dear, and I trust that the record of his work may find among them, or his colleagues and fellow-students, a record worthy of the man by whose death the school and teaching of anatomy in Dublin is poorer than, in my opinion, it has been made by any other death that I can remember. . . ."

Professor Windle, President, Queen's College, Cork, in the *British Medical Journal*, writes :—

"As one who has been associated with PROFESSOR FRASER as co-examiner for several years, it affords me satisfaction to be allowed to add my tribute to his worth to those of others who knew him.

"It has been my privilege to act with a number of examiners in various parts of the kingdom in testing the anatomical knowledge of medical students, and with none of them have I ever had pleasanter relations than with the late PROFESSOR FRASER, nor have I ever been associated with any man who displayed a greater desire to elicit what the student knew, or to ensure that his real merits or demerits should be fairly and carefully ascertained.

"The essential kindness of the man, sometimes hidden to the casual observer, never appeared more clearly than when he was dealing with the nervous candidate, anxious, but unable, to give evidence of his knowledge.

"Of PROFESSOR FRASER'S profound knowledge of his subject it is perhaps hardly necessary for me to write. He was a

most untiring worker, and one of the tragedies of his early and unexpected death is that I fear much of his unpublished work must perish with him. He showed me on one occasion vast sheaves of most exquisite photographs taken by himself and relating chiefly to points in embryology. These he hoped to publish some day when less oppressed by the burden of work than was usually the case with him. I earnestly hope that some means will be found of giving these to the scientific world, for it would be a thousand pities if they were lost for ever.

"The present year has seen the death or disappearance from active work of several men whose names are household words amongst anatomists, but, I think, it is safe to say that amongst these, by those who really knew him—and they were perhaps comparatively few—none will be more lamented than that large-hearted man to whose memory these few lines are consecrated."

Miss Georgina W. Clarke, L.R.C.P. & S.I., writes :—

"By a strange and sadly perverted instinct it seems to have become part of our nature to speak of the dead with a kindliness often denied to the living. We lavish praise ungrudgingly upon those who have left us, as though our poor words could please or reach them 'in those silent homes of thought'; often perhaps with the consciousness pressing us sorely that what we say might often have irradiated their daily path had it been said in life.

"Therefore when the sorrowful tidings reached Dublin that the Royal College of Surgeons had lost its much loved and much respected Professor of Anatomy, as a ray of comfort to those who mourned him came the thought that at all events no belated or untimely expressions of affections would be those offered at Professor Fraser's shrine.

"To few it could be given, as it was to him, to realise in life how thoroughly he had won the regard of his pupils, how they revered him as a teacher, and viewed him as their own special possession—the champion of their cause. They knew that in the world outside his attainments were highly thought of, that his intellect was second to none, but of all this they recked nothing. To his students he was simply the indefatigable and unsparing teacher, the kind and unfailing friend,

the very centre, round which the whole College seemed to revolve. To the first-year student PROFESSOR FRASER always loomed big and large, as the man with whom he came into hourly contact, who gave the colour to his days' occupations, and who ultimately had to be reckoned with as a much-dreaded examiner.

"Students, like most other subordinates, can generally criticise their professors with the clear-sighted vision granted to the young, where the failings of their superiors are concerned, and yet, looking back over five years spent in college, the whole concensus of youthful opinion seemed to be summed up in the oft heard, if somewhat unclassical, tribute : 'Alec's a brick, he'd do anything for a student.'

"Nor was this feeling confined to the ranks of his own pupils. One can recall a batch of disconsolate candidates sitting in the bone-room awaiting their summons to an anatomy examination, and close by sat a man from another college, anxiously reckoning the turns, in the hope that by good fortune PROFESSOR FRASER might fall to his lot as examiner. When it was suggested that he ought to do better with the examiner from his own college, the rejoinder came sharp and decisive : 'We'd rather have yours—by long chalks—for every one knows that if there's a chance in the room FRASER is the man to give it to you.'

"And so he was, and yet no fool was PROFESSOR FRASER; discrimination and perception lurked in the twinkle of his deep-set eyes. He possessed to an unusual degree the mixture of shrewdness and simplicity, so marked a characteristic of his northern race, and many a laggard student awoke to an unpleasant consciousness that there was a world of quiet sarcasm underlying a rebuke of almost childish simplicity, and that it was a mistake to incur the displeasure existing under such an apparent innocence of manner.

"I think his wonderful popularity in the College was largely attributable to his great human-ness 'Dinna think,' he remarked once, lapsing into the quaint Scotch dialect which was a part of himself, 'dinna think that I forget what it feels like to be a student. Eight and twenty years have passed since I sat for my finals, and yet still I awake at night, often all of a tremble, thinking I am facing those examiners again.'

"'That ought to make you very merciful, Professor,' we hazarded.

"'Aye,' he would rejoin simply, laying down his cigar; 'aye, mon, and I think it does.'

"And that his students thought so too was evidenced by the outburst of spontaneous cheering which his presence never failed to evoke when he entered the Examination Hall.

"Few indeed who have passed through the crucible of the Albert Hall can fail to remember the sense of comfort they experienced, when, out of the sea of strange and unknown examiners emerged the familiar figure of our own Professor, holding up a deprecatory hand to quell the storm of applause with which he was greeted. Looking, it is true, surprisingly professorial and important in his robes and hood, but in reality not a whit the less the students' man than when surrounded by his class in college, arrayed in his long dissecting coat, its front bedaubed by many coloured chalks, and which seemed an integral part of himself.

"In these days of rush and hurry we have little time for remembrance, but surely this was one whom it will take his students long to forget, for he was a man in himself, and one who impressed those with whom he came in contact by his own personality. And if it is true that the greatest are the simplest, then PROFESSOR FRASER was indeed a great man, and it will be less for his powers of intellect and his gifts as a teacher that he will be remembered than for the sweetness and simplicity of his nature.

"And so we leave ALEC FRASER, the kindly, simple soul, who did his duty, and who tried to make others do theirs, whose death will bring a sense of desolation and loss to countless numbers of his former pupils, now scattered over far distant parts of the world. And though his place will know him no more, and his accents are lost in the hush of a great stillness, and his life is as a candle gone out, he will live long in the affections of those he taught, and many and many a one will be found to wish that, when his tale of life is told, it may reckon up one-half the kindly deeds and evoke one-half the feelings of affectionate regard which surround the memory of his old Scotch Professor, who now—'after life's fitful fever'—sleeps well."

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PART I.

ORIGINAL COMMUNICATIONS.

ART. XIII.—*The Aims of Anatomy.*[a] By A. CAMPBELL GEDDES, M.D., Professor of Anatomy in the Schools of Surgery of the Royal College of Surgeons in Ireland.

I FIND it hard to realise that this is in truth my day of introduction to this famous old School of Surgery; for I, during the past few weeks have lived so much in the building supervising the work of transforming into bricks and mortar, woodwork and paint, the will of the Council that their department of Anatomy should rank, in respect of convenience and equipment, second to none in the three Kingdoms. Throughout these crowded weeks so much of me has grown into the department, and so much has the department come to be a part of me, that I feel anything but a stranger to the place as I stand here to-day.

During the summer the buildings have been transformed, and I hope that you approve the transformation. But great as is the obvious change there is a greater, the change in personell, and the cause thereof we all deplore—you, because Professor Fraser's death has robbed you of a

[a] Being the Introductory Lecture delivered at the Royal College of Surgeons in Ireland on Friday, October 15th, 1909.

friend; I, because Professor Fraser's death has robbed the science of anatomy of a devotee, a patient observer, and a tireless worker, and it is a loss that anatomy can ill afford. I know that there are those who believe, or at least pretend to believe, that anatomy has reached its limit; that all that there is to be known of structure is known; that it matters little who comes or who goes in anatomy; that anyone with a retentive memory can teach the subject; for, all that its professors have to do is to absorb what others have written, and at stated intervals recite to their weary students a more or less lengthy passage from the tablets of their well-stored memory. It is a common experience for all anatomists to be told that anatomy is a dead subject. Because this belief seems to be gaining ground I wish to speak to-day of the Aims of Anatomy, and to show if I can that there is still so much for anatomy to do that she can ill afford to lose such men as Professor Fraser.

Humanity and the penal code compel us to study the structure of organisms that are dead, but it is about the structure of living things that we wish to know, and it is only because the subjects, that come to us, have lived, and because they are somewhat similar to those that still live and to those that will live, that they interest us. We see the tissues fixed and still, but we try in imagination to conjure back to them the full pulsating life that was theirs; we try to picture once more in action the most wonderful mechanism in all the world, even when it lies still and lifeless on the table before us.

Anatomy looks on death as an unfortunate accident; its subject-matter is the structure of living things. If I were to define the word "Anatomy" I should say that, in its widest sense, it is "the science of the structure of all living things, both plants and animals." Human Anatomy I would define as "the science of the structure of the human body, including the origin and development, the relations, the correlations and variations of the tissues and organs ancestrally, racially and individually considered." There is much in this of which we are wholly ignorant and he who says that anatomy is a dead subject, meaning that all is known about

it that can be known, shows himself ignorant of the extent of his ignorance and of ours.

The science of the structure of all living things must forever be the foundation of the sciences of the functions and of the diseases of living things, and these in turn are the eternal foundations of the sciences of treatment. Thus do we reach the conception of anatomy as the basis of the sciences of physiology, of pathology, of medicine, surgery, and midwifery, in the face of the proud boasts that I often hear from highly successful consultants, that they know no anatomy, I am not sufficiently courageous to say—the practices. It is because anatomy occupies this fundamental position in relation to the ever-advancing clinical sciences and their bewilderingly rapidly moving ancillaries, physiology and pathology, that I venture to assert that though anatomy may, to some observers, appear to be asleep, it is not dead.

For long it has been recognised that the operating surgeon should know something of the structure of the organism upon which he operates. In result the details of structure that possess an obvious bearing upon the treatments and operations of surgery have been studied and described not less than seventy times seven. Now, one may almost say that they are known and fully recorded in the numerous works on anatomy that exist. But the problems of structure, the correlations and variations which might be helpful to the physician and surgeon in arriving at their diagnosis, in making their prognosis, and in deciding upon their treatment, have not been worked at, and still present boundless fields for anatomical research.

If the truth must be told, it is that anatomy is one of the most backward of all the sciences. It has hardly yet begun to pass beyond the stage of isolated observations—the most elementary stage of knowledge. There is no real philosophy of anatomy—it is necessary to see, to touch, and to handle in order to know. Not yet has the stage been reached when from a study of the surface appearances we can tell with tolerable certainty the arrangements and proportions of the hidden parts, and yet it is toward that end that anatomy is

striving. Nor is it a hopeless struggle, for the body in its proportions and relations is what its internal organs make it either grossly and mechanically, or through the subtle action of those guides of metabolism, which the physiologists call the internal secretions. This is a most important conception for the clinician to keep ever before him in his study of the living creatures that he is called upon to treat. Its importance will become more apparent as the new conception of disease gains ground, and the new conception is different from the old, and more like that still older conception that dwelt upon diatheses.

At the present time clinicians are coming less and less to speak of micro-organisms as the "cause" of *endemic* diseases, and they are right; for such micro-organisms are a condition of the cause, or, if you will, a contributory cause rather than the cause itself. An example will make my meaning plainer. It is true that all forms of tuberculosis are due to the growth and proliferation of the tubercle bacillus in the tissues, but the presence of the tubercle bacillus is obviously not the only factor in the determination of disease, for every one of us city dwellers meets the bacillus every day in the air we breathe, in the milk we drink, and in the butter we eat, and yet we do not all develop tuberculosis. The presence of the tubercle bacillus is a constant factor in the life of the city dweller; it cannot, therefore, strictly speaking, be the cause of any morbid condition. If it were, that morbid condition would of necessity be as widely spread as is the bacillus within the bodies of men, for in order that anything may justly be described as the cause of another its presence must be inevitably followed by that other. We must, therefore, seek for the cause elsewhere, merely noting that the presence of the tubercle bacillus is an essential condition of the cause becoming operative, and we must turn to the other living factor in the problem, to the human being or animal who resists or who succumbs to the bacillus, and seek in its constitution something that will account for its behaviour towards the organism.

The difference between the people who get tuberculosis,

as the saying goes, and those who do not, is nothing more and nothing less than this—that they are different people. The fact that one gets tuberculosis and the other does not is a mark of their difference. What we want to know is this—Is there any other mark by which we can recognise this difference? Is there any superficial peculiarity of structure indicative of the liability to fail to resist the onset of the organism? Is there anything about the bodies of such individuals that will be present and recognisable long before the disturbances caused by the growth of the bacillus are recognisable? Can we not so correlate structure that in the future we may be able to say because this individual has such and such an arrangement of his cutaneous veins, or such and such a shape of his chest bones, or of his leg bones, or of anything else you like to mention, which we may call A; because he possesses this mark A he also possesses such and such a peculiarity of his lymphatic system, or such and such a peculiarity in the arrangement of his pulmonary vessels, or of his thyroid gland, or of his pituitary, which we may call B; because in the dissecting room we find that A. is always a mark of B, and further, because B is a structural peculiarity which is almost invariably found in subjects dead of pulmonary phthisis, and not in those dead of cerebral hæmorrhage or kidney disease, this man who undoubtedly has the mark A is likely to develop pulmonary phthisis unless he takes special precautions.

This is what I call an anatomical-pathological-clinical system, and the formulæ of all these systems must be:—Superficial and visible structural peculiarity A is a mark of internal and invisible structure B; internal structure B is a mark of a type of bodily organisation D; bodily organisation D is a mark of, may be a cause of, a liability to develop morbidity E.

Some of you who listen here to-day may think that I am wandering in the realms of fantasy, and that my anatomical-pathological-clinical systems are compounded of the stuff that dreams are made of. In sober truth I tell you that such systems do exist.

It may not be generally known, but it is none the less a fact,

that from the different types of growth of hair it is sometimes possible to form an accurate estimate of the efficiency and sufficiency of the suprarenal bodies and of the liver, and that from the proportionate lengths of the limb bones in an adult it is possible accurately to judge of the activity of his reproductive glands. I am prepared to go further and to say that there is practically conclusive evidence to show that the dates at which the epiphyses close is conditioned by the state of the reproductive cells, and that in cases of injury in the epiphysial regions, occurring long after the normal dates of closure, a surgeon who fails to consider the state of development of the sexual hair of the face or body may be misled in his diagnosis.

To make my meaning plainer I give a concrete example which shows the correlation which exists between bone lengths and the condition of the reproductive glands.

As a result of a long series of measurements it has been found that in a mixed European population of healthy men the lengths of the humerus, radius and ulna, the femur, tibia and fibula can be expressed as fractions of the individual height, and that men with a stature of 1820 mm. all have humerus lengths of about 358 mm., some may be as long as 370, others as short as 346. Wider departures from the mean are abnormal. Similarly the ulna should not be longer than 290 mm., nor shorter than 273; the radius should not be longer than 272 mm., nor shorter than 256, and similarly for the other bones. If, now, we meet an individual of the same stature—namely, 1820 mm.—who, on measurement, is found to have a humerus of 272, an ulna of 234, and a radius of 375, we can at once say that he marks a departure from the normal, and that the departure is very slight in the humerus, but considerable in the radius and ulna. If, similarly, there is a slight excess of length in the femur and a correspondingly greater excess in the tibia and fibula, then we are absolutely justified in saying that he is abnormal in structure, that his trunk length is too little for his stature and his limb length too great. If we find that every now and again we meet with an individual who shows a similar departure from the normal,

who similarly possesses a short trunk, a femur slightly, and a tibia and fibula markedly, longer than the average length for men of that stature, we come to recognise that there is a group of abnormals mixed up with the normals. If, further, we find that the members of this group always have disturbances in the development of the facial and body hair, and that they are always childless, we begin to arrive at a correlation in which a definite peculiarity of body build is recognised as a mark of incapacity to procreate the species.

Then it is possible to go further and to extend our observations. Breeders of cattle, sheep and poultry frequently sterilise the animals that they intend to sell for food, and I have found that those animals, if operated upon while they are still quite young, all show a comparable disturbance of body form. The eunuchs of the Eastern harems are also peculiar in their structure in just the same way as the childless, long-limbed, short-bodied group of the population. It is important to add that microscopic examination of the tissues of the reproductive glands of several members of the abnormal group has shown them to be functionless organs.

In this way I believe that I have established an anatomical-pathological system. I suspect—in fact I am almost certain—that it possesses a clinical extension, and that unless these people are carefully treated they inevitably develop a definite morbidity—at least, a very definite range of pathological changes has been found in their tissues, but I wish to collect further evidence before I commit myself on the subject. Of one thing, however, I am sure, and that is that in certain cases we can, after careful measurements of the bone lengths, with safety prophesy that no child will ever be born to the individual in question.

One more example of one of these systems must suffice at the present time. It is not infrequent to see in the living, or to find at the autopsy table, that the development of the subcutaneous veins varies enormously in different parts of the body. Sometimes the subcutaneous venous plexus of the lower extremities is extraordinarily rich; at other times the thoracic subcutaneous veins are the more striking. The

meaning of these facts is not obvious. That they have some meaning is certain. The case of the excessive richness of the cutaneous veins in the lower limb is so complicated that at present I prefer not to discuss it. In the case of the development of veins in the thoracic parietes[a] the problem is more simple.

Let us suppose that every now and again we meet with a subject that has several large veins running across the sternum, and freely anastomosing in the upper intercostal spaces, and that we wish to find out what this means.

The line of thought to be pursued is as follows :—

First, one momentarily reviews the function of the veins and the common causes of their enlargement. These are well known, and without further effort it is legitimate to hypothecate that the reason for the size of the veins of the thoracic parietes is a slightly raised intra-thoracic venous pressure, the valves of the jugular bulb and of the tributaries of the inferior cava and the tone of the abdominal musculature being normal.

Examination of such cases has led me to believe that the common cause of this physiologically raised intra-thoracic venous pressure is the small size of the pulmonary veins—a developmental error of unknown causation. By itself such an abnormality would be difficult of recognition ; but its correlative increased development of the musculature of the right ventricle is less difficult to recognise. I believe that such a limited cardiac hypertrophy is always present in the cases of which I speak. That was the first stage in the growth of my conception of this anatomical-pathological system—the recognition of the fact that the existence of veins across the sternum is a mark of a slightly hypertrophied right heart and of insufficiently large pulmonary veins.

[a] At the time this paper was sketched out the writer had not read de Giovani's "Morphology of the Human Body." In it the significance of veins appearing in the upper intercostal spaces and crossing the sternum is discussed. Anything that is said on the subject here may be regarded as lending some support to the views that he has advanced. De Giovani's work is that of a pioneer, and anyone who is interested in the subject of structural correlations will find the labour of reading "Morphology of the Human Body" well repaid.

The next stage was to consider what is the effect of this hypertrophy acting through the medium of the blood pressure that it generates. I believe it to be an interference with the lymph return from the lungs. The explanation of this is probably dependent upon the anatomical fact that the lymphatic vessels of the lungs lie very close to, and frequently form loops round, the pulmonary arteries, and I imagine that full distended pulmonary arteries will seriously press upon them and appreciably affect the flow of lymph through them, and in this way produce a chronic stagnation of the lymphatic flow.

Chronic stagnation of the lymphatic flow I believe to be one of the conditions which favour the growth of the tubercle bacillus. I speak in fear before so many pathological experts, but I think that the chain of connection is this. The small amount of what one may call infected lymph that is thrown into the circulation in these cases is insufficient to provoke a reaction. The poison seems so little that the body does not think it worth its while to react, with the result that the bacillus has it all its own way. But there is probably another factor involved. All of us who are city dwellers inspire along with our daily quota of soot and stone dust many tubercle bacilli. On reaching the lungs the bacilli are absorbed and carried away in the lymph stream to the bronchial glands, and there destroyed. In those unfortunates who possess no proper lymph flow from the lungs the invading bacillus is left to grow and to multiply at the periphery instead of being coaxed by the gentle currents of the lymph stream into the lymph glands. But whatever may be the real reason makes no difference to the conception that such a system as this might exist—a system which would run as follows:—The presence of enlarged veins across the sternum is the external mark of a developmental insufficiency of the pulmonary veins; developmental insufficiency of the pulmonary veins causes increased pressure in the pulmonary arteries and hypertrophy of the right heart; the consequent increase in size of the pulmonary arteries interferes with the proper lymph return; an area of sluggish lymph drainage suits the tubercle bacillus, and so through some such chain of anatomical and pathological facts we would

reach the short rule of thumb—the existence of enlarged veins upon the thoracic parietes is a mark of an internal condition which renders tubercular disease highly probable. I believe that it is so, and that this fact has long been known empirically to some general practitioners, for I remember a very old doctor saying to me some years ago: "Big blue veins on the breast bone mean tuberculosis as likely as not. Whenever you find them in a patient examine the apices and deep in the axillæ."

But are we to be satisfied to wait to use such external marks merely as diagnostic aids? Assuredly not.

If markedly enlarged veins crossing the sternum come to be regarded as a mark of liability to tubercular disease and are found to exist on any chest that a medical man examines, or if he finds any other surface appearance that may come to be recognised as a mark of internal abnormality which predisposes to morbidity, he ought to treat the patient in some way to prevent the threatened illness. This opens up a new vista, and in the distance we see the Medicine that is to come. A Medicine that, acting on the sound tactical principle that the best form of defence is offence, goes out to meet its foe, Disease. A new Preventive Medicine—that is the goal of all our efforts. It is good to cure disease, it is better to prevent it. We ought all to strive to live in the spirit of the old proverb—"a stitch in time saves nine." Think for one moment how much humanity would gain if the clinicians could become as gods, wise before the event. It is to make them wise that we anatomists now are struggling. It will be a long struggle, for I am afraid that it will take us a long time to observe and to colligate the facts.

This is the conception that I have formed of the aim of Scientific Anatomy. To advance from being a pure descriptive science until it becomes an inductive science, which will carry forward on its shoulders the Preventive Medicine that deals not with drains but with man, that strives to develop man's dormant possibilities to their highest pitch, that he may move through this microbe-infested world uninfected and undismayed.

I do not, of course, mean that we ought to ignore sanitation; but the fact that we are seeking sanitation should be no excuse for losing touch with humanity. It is true that there are micro-organisms, such as that of cholera, and that there are parasites, such as the trypanosome of sleeping sickness, which appear to be true causes of the diseases with which they are associated. Of these I do not speak. Until pathologists have learned how to render men immune to their attack, the only possible method of lessening their ravages is to attack them and again to attack. Nor do I speak of the causal infective agents of the epidemic diseases; they too must be fought directly.

What I do speak of are the endemic diseases. All are exposed to their so-called causal infections, and yet by them one is taken and the other left. One moiety of the reasons for this discrimination is studied by the pathologists under the name of immunity; and anatomists are working at the other moiety under the title of structural correlations. It will be well for the sciences of treatment when the sundered halves are reunited and the pathologist comes back to the dissecting room and renews his studies in morbid anatomy.

But the fault is not all on one side. Anatomists are too prone to dissociate themselves from their medical brethren. Possibly all anatomists are too inclined to think of anatomy as all-embracing and to imagine that those who are engaged in treating the sick and in solving the problems of disease should have the good sense to keep in touch with the science of structure. Still I often wonder why no one comes to see the exquisite *post-mortem* examinations of the Anatomy Hall, and I sometimes remind my pathological and clinical friends that we see the details of the dead machine even as we struggle to picture the mechanism of the living, and I, personally, am always glad to see clinicians round the autopsy tables, that I may glean some ideas from the largesse that they have to bestow.

I hope that my meaning is plain. The idea that I wish to convey is simple. It is really nothing more than the obvious fact that every phenomenon of nature, including animal struc-

ture, is a mark of some other pre-existing or co-existing phenomenon—that things do not happen just because they happen; that an artery or a vein does not appear in an unusual place because of an individual volition so to appear, but because of some pre-existing disturbance in some other part of the developing vascular system. Why the vascular system develops we do not know, though we do know for what it develops, and we are beginning to understand how it develops and something of the causation of its variations, and we do know that an organism possessing these variations may possess certain differences in constitution, and that these differences may be associated with special liability to specific forms of disease.

We have been far too much accustomed to speak and to think of all human beings as built on the same plan. It is well to recognise that beneath the superficial uniformity there is an infinity of difference. No two of us have identical bodies, and as structure is not only the basis of function, but also the outcome of function, it is not reasonable to suppose that any two of us will react identically to identical environmental conditions. If we did it would be a miracle, and yet the text-books expect our students to believe that such miracles happen with bewildering rapidity. If you agree that there is no miracle involved in the fact that we have not got tuberculosis, and that thousands of people have, then you agree with me that the effective cause of tuberculosis must lie in the general composition—the structure—the anatomy of the body. And that is all I ask. To agree that there are surface differences in structure which invariably accompany hidden variations is a step into the unknown for many; it is a fact, nevertheless, and one of the most important facts of anatomy for the clinician to lay firm hold of.

But there is another great fact of life. It is that tissues modify and change to suit changes in their environment. This is the basis of all medical treatment. Empirically, physicians for generations have poured countless gallons of drugs into countless human beings on the tacit assumption that they could, by adding this new and often nauseous

factor to the environment, cause the tissues to modify themselves in a manner favourable to the health of the individual. As the correlation of structural peculiarities with the liability to develop definite morbidities becomes more certain, so will the methods of inducing favourable alterations in the structure of the body become more sure. Nor do I believe that the use of these anatomical prognostications will be limited to combating the structural peculiarities that aid the infective organisms of the endemic diseases to gain a lodgment within the body. There are numerous degenerations of the viscera which may at least be delayed if treatment is commenced sufficiently early, and it is conceivable that these are partially determined in their onset by unfavourable departures from the normal.

As we dream of the future we seem to see the day when medical officers of schools will be able to draw up a health horoscope for each child—will be able to tell the anxious parents of the dangers that lie in wait for their children as the years roll by. And then the sensible parent (all parents will be sensible by that time, or else, perhaps, the State may be the official parent) will say to the physician: "Apply your alterative treatment, your physical and respiratory exercises, regulate the diet, inject the serums and glandular derivatives, and turn our son into a man of fine physique." Speedily the medical man will take charge of the soft pliable living tissues, and will mould them to his will as a potter moulds his clay. Will the dream come true? It will, it is coming true now, and the basis of the new Medicine will be—must be—a knowledge of structure, a knowledge of the correlations of Anatomy.

But you may well ask what light upon these correlations does the clinician get from the anatomical text-books and treatises of to-day? None I am afraid, or at best very little.

Before we can all go forward together we must learn to work together, and in so doing break with our separatist and pedagogic past, and, more than all, we must change our outlook on structure. We must consciously regard the tissues as adaptable changing things that come and go. We must

dwell more on their beginnings and origins, their growth and development, their transformations and their disappearances, and less upon the condition in which we find them during the fleeting years of adult life. But with all the changes in the teaching of anatomy that are coming we must never lose sight of the needs of the operating surgeon and the lone practitioner. We must teach them to see clearly where no human eye can see. We must endeavour so to teach the details of structure that every little elevation, every pulse, every tendon, every bony point, tells its tale to the examining finger. It will be well when we can induce our students to learn from the blind something of the powers of touch, so that the hand of the practitioner may be as an X-ray apparatus to him, by means of which he can know of the things he cannot see, except in the dissections of the dead. I rather suspect, too, that at present operative surgery is only half taught, and that each operation should be twice illustrated—first by a dissection of the operation region, and then by an actual performance of the steps of the operation. But these are practical points which belong rather to a discussion of the details of anatomical teaching. They are in some measure foreign to my main thesis of to-day, which is that Anatomy is still in the first stage of its existence as a science, and that it must develop through the stages of colligation and induction, ultimately to take its place as a deductive science at the basis of all Medicine and all Surgery.

These are the Aims of Anatomy. Shall we succeed? Who knows? It is given to no man to read the future; but of one thing we may be sure, that he who looks will find something; it matters little what. The aim is everything. To have a goal towards which we struggle, to reach the end and find nothing, to prove a negative—these are all better than never to set out at all.

With all this to do Anatomy can spare from the ranks of her adherents no one who understands the meaning of variations or who knows development. Professor Fraser did both of these things, better probably than any of his contemporaries. Just when we needed him—and his knowledge—

to guide us forward into the new paths he has been taken from us. Much of his knowledge has perished with him and is lost. His untimely death is one of the tragedies of science.

ART. XIV.—*Hæmatemesis and its Surgical Treatment, Illustrated by Notes of Two Cases.* By WILLIAM TAYLOR, M.B., Dubl. Univ., F.R.C.S.I.; Surgeon to the Meath Hospital and County Dublin Infirmary; Member of the Council, Royal College of Surgeons in Ireland.

THE treatment of hæmatemesis, the result of gastric and duodenal ulceration, is of such vital importance in many instances that I venture to record the following two cases which occurred in my practice in the early part of the past summer :—

CASE I.—Miss H. E., a lady about fifty years of age, was taken ill at 3 a.m. with a feeling of faintness, followed soon afterwards by sickness and vomiting. The vomitus contained a quantity of blood mixed with some food debris. Again, at 9 45 a.m., she got a similar attack, and vomited about ten ounces of bright red liquid blood. Until six weeks before this attack she had always enjoyed good health, but during those six weeks she complained of indigestion, for which she was dieting herself. When seen after the second hæmorrhage she was pale and collapsed. Her pulse was about 120 and feeble, though regular. She did not complain of pain. The abdomen was soft and flaccid. Palpation revealed nothing abnormal. There was not a trace of muscular rigidity or of induration. The tongue was clean, enlarged, flabby, and slightly indented at the sides. She was removed as soon as possible to hospital, and at 12 noon I opened the abdomen, as I felt convinced that a recurrence of bleeding of a similar nature would be fatal. The abdomen opened, the stomach seemed normal in every respect. There was not a trace of a chronic ulcer to be seen or felt. The stomach wall was then incised for about three inches, so as to examine the interior. It was only after a most careful and methodical examination of the entire interior of the stomach by everting it like a glove that we found three small ulcers, extending from the mucous membrane into the submucous coat on the posterior wall, high

up towards the œsophageal end. In the centre of the largest of these ulcers the open mouth of the artery from which the hæmorrhage occurred was easily seen and demonstrated to those present. The vessel was fairly large, and the opening into it was about as large as would readily admit the end of an ordinary knitting-needle. A purse-string suture of fine silk was inserted round the ulcer and tied tightly, so as to occlude the artery. A second suture was passed deeply through the wall of the stomach underneath the ulcer and tied firmly over the end of the artery, thus completely closing it. The anterior gastric incision was then closed, after which a posterior-gastroenterostomy was performed in the usual way. The subsequent course of the case was uneventful, recovery was rapid, and she is now in the enjoyment of perfect health, able to eat anything and everything without either pain or discomfort.

Case II.—The second case is that of a man, who came under my care at the same time as the lady whose case I have related. He was admitted into the Meath Hospital with a very clear history of a chronic gastric ulcer. He had been ill on and off for many years, and had occasionally coffee-ground vomiting. Some time prior to his admission into hospital he had an exacerbation of his pain, and vomited almost everything he swallowed; even milk used to cause pain. He used to relieve the pain by taking bread soda, and occasionally, when he had no bread soda at hand, he used to give himself relief by inducing vomiting.

Two days before seeking admission into hospital he vomited a quantity of blood. He certainly looked as if he had lost a considerable amount of blood, for his pallor was most striking. On examination there was well-marked rigidity of both recti muscles above the umbilicus, the right rectus was slightly more rigid than the left. Palpation caused him to complain of tenderness over the epigastrium, but there was no induration to be detected on account of the muscular rigidity.

Considering the long and distinct history of ulcer the patient related to us we determined to do a posterior-gastroenterostomy upon him as soon as he could be properly prepared for the operation. His teeth were very bad, and his mouth was generally in a septic state.

On the day following admission I received a message while in the hospital to say that the man had vomited a large quantity of blood, and was in a very bad state. On going into the ward to

see him, I found the floor around his bed simply covered with blood and blood clots. The patient was lying in a collapsed state in the bed and very pale, but he did not seem as collapsed as I expected considering the amount of blood he had vomited. He was brought into the operating theatre as soon as we were able to have everything ready for operation, and the abdomen was opened in the usual way. An indurated mass, about as large as a good-sized hen's egg, was found extending from the pylorus along the lesser curvature and upwards towards the liver, to which it was adherent. There were adhesions posteriorly as well, so that it was impossible to bring the stomach without the abdominal wound. An incision was made into the stomach, just as in the former case. The ulcer was readily seen. It occupied the interior of the indurated mass just mentioned, and was filled up with blood clot. The blood was sponged out, but careful search failed to reveal the vessel from which the hæmorrhage had come. As it was obviously a large vessel, and as it was likely the bleeding would recur if the vessel was not ligatured, and as the vessel could not be seen, I determined to try and occlude the vessels along the lesser curvature, both right and left of the indurated mass, and thus hope to secure the source of the bleeding by one or other of my sutures. With two fingers of my left hand inside the ulcer to act as a guide I passed a curved needle, armed with a stout catgut suture, through the entire thickness of the stomach walls to the left of the ulcer. The needle passed through from the anterior to the posterior wall, and the ligature was then tied by my assistant on the lesser curvature. In a similar manner a suture was passed and tied to the right of the ulcer, which was close to the pylorus. As nothing further could be done to arrest the hæmorrhage from the ulcer I closed the wound into the stomach and performed a posterior-gastroenterostomy. Morphin was given freely afterwards. The patient vomited some blood once subsequently, but after that his recovery was uninterrupted and complete. He can now eat what he likes, and has no pain or sickness.

Both these cases are interesting, the former because it is the type of case in which we are generally told in text-books, operation is, as a rule, futile, and indeed generally unnecessary, as the cases recover spontaneously. From the size of the vessel that was opened in the case of this lady, as demon-

strated at the operation, and from the rapidity with which the second hæmorrhage followed upon the first—less than seven hours—and from the amount of blood the lady lost by these two hæmorrhages, I am quite convinced that the hæmorrhage would have recurred, and that another such hæmorrhage as she had already had would have been fatal.

The second case is of interest on account of the nature of the procedure adopted to arrest the hæmorrhage. Judging from previous experiences of repeated copious hæmorrhages in cases with clear histories of old-standing gastric or duodenal ulcers, one is justified in concluding that operation in this case was the means of saving the patient's life, but whether the result would have been as satisfactory if I had contented myself with the performance of a posterior-gastroenterostomy alone when I failed to detect the actual source of the hæmorrhage instead of adopting the method I did must remain open to question. At all events, it added nothing to the risk of the posterior gastroenterostomy, while at least it must be admitted that it closed two probable sources of arterial supply, and having regard to the situation of the ulcer I should say the odds are greatly in favour of the bleeding having come from the coronary or pyloric arteries or some of their branches. I have seen five cases of death from hæmorrhage due to chronic ulceration of the stomach. In four of these I saw the *post-mortem* examination, and saw the opening into the vessel from which the fatal hæmorrhage took place. The fifth case was also verified by *post-mortem* examination, of which I was informed at the time, but I did not see it myself. I also know of at least seven other cases that died from hæmorrhage from gastric or duodenal ulcers within the past three or four years. In four of the five cases on which *post-mortem* examinations were made in the Meath Hospital operation would have been attended with a fair prospect of success if undertaken in time, as the ulcers were easy of access, and with the stomach opened there would have been little or no trouble in securing the bleeding vessel. In the fifth case operation could scarcely have been successful. The ulcer was extensively adherent to the pancreas, and it was the splenic artery that was opened.

Still it is impossible to form any opinion when the patient is seen as to whether the bleeding is coming from such a vessel as could be ligatured, or as to whether the ulcer is so situated that one could reach it or excise it, and thus arrest the hæmorrhage. These are facts that can be found out only by operation or *post-mortem* examination. If such a condition is discovered at the operation, the patient will not be one whit the worse off provided the operation is undertaken in reasonable time, and at all events the physician and surgeon will have the satisfaction of knowing they did what lay in their power to save the patient's life. It may be some consolation to a medical man who sees a patient after one of these serious gastric hæmorrhages, and who postpones operation in the hope that the hæmorrhage will not recur, or delays for a more favourable opportunity, which unfortunately does not present itself, when the *post-mortem* examination is made and it is discovered that operation could have been of little or no good in arresting the bleeding. How would such a man feel if, on the other hand, the autopsy showed him that the hæmorrhage could have been arrested and the prospects of saving the patient's life thereby could have been greatly increased? I am convinced that one should not hesitate to operate in a case of severe hæmatemesis or melæna occurring in the case of one who gives a clear history of chronic gastric and duodenal ulceration provided that the patient is not so exsanguinated and collapsed as to make it clear that operation in itself must hasten the fatal issue. It is in such a case as that of the lady already detailed that one might, perhaps justifiably, hesitate. There was not by any means a clear history of ulceration in her case, and certainly not a chronic ulcer, still she complained of what she described as "indigestion" for some six weeks, but there was no other sign or symptom of ulceration save that of slight pain and discomfort after eating, no vomiting, no hæmatemesis, no muscular rigidity. To put it clearly, I would urge the advisableness of operating in every case of copious bleeding—even after the first hæmorrhage, not delaying for a second hæmorrhage—where there is a clear history to be obtained of chronic gastric or duodenal ulceration. I would also urge the

advisableness of operating in any case of recurrent serious bleeding, especially if the second hæmorrhage recurred in a short time in anyone who gave a history of even a few weeks' severe indigestion. Recurrent slight hæmatemesis or coffee-ground vomiting in connection with chronic gastric ulceration does not demand operation in itself, but it is a clear indication that there is a chronic ulcer which will not heal spontaneously, and which sooner or later may cause serious or fatal hæmorrhage, or may lead to perforation into the general peritoneal cavity, or perhaps terminate in the development of carcinoma. Such a condition indicates the advisableness of the performance of some operation for the cure of the ulcer, but the surgeon can select the time most suitable and convenient for both the patient and himself.

On the other hand, one should never operate for hæmatemesis occurring in the anæmic young woman who never had any distinct evidences of gastric ulceration. An operation in such a case simply adds a serious complication to a condition that with rest, abstinence of food for a couple of days and a hypodermic injection of morphin would readily get well without further trouble.

ROYAL COLLEGE OF PHYSICIANS OF EDINBURGH, ROYAL COLLEGE OF SURGEONS OF EDINBURGH, AND FACULTY OF PHYSICIANS AND SURGEONS OF GLASGOW.

THE following candidates, having passed the requisite examinations of the above Board in October, were admitted diplomates in Public Health :—Alfred Beswick Darling, Scotland ; Richard Lee Bolton, Lennoxtown ; Cecil Charles Murison, India ; Jamesina Jean Marr, Scotland ; Francis Wood Greaves, Barbados ; James Blakely Miller, Scotland ; Douglas Panton Blair, Scotland ; Richard Baring Davidson, Congleton ; and John Allan, Partick. At the same Sederunt the following candidates passed the First Examination in Public Health :—Louis William Crombie Macpherson, Scotland ; Laurence Gibson, Scotland ; William Hector Mackenzie, Scotland ; Agnes Ellen Porter, Colombo ; John Reid, Glasgow ; Byramji Shavaksha Tarapurvalla, Bombay ; and John Scott, Scotland.

PART II.

REVIEWS AND BIBLIOGRAPHICAL NOTICES.

Gunshot Wounds. By C. G. Spencer, M.B. Lond., F.R.C.S. Eng.; Major, Royal Army Medical Corps; Professor of Military Surgery, Royal Army Medical College. London: Henry Frowde, Oxford University Press; and Hodder & Stoughton. 1908. Cr. 8vo. Pp. xii + 287.

In the first chapter the author gives a short and simple account of a very difficult subject—*i.e.*, the mechanics of projectiles, in which are numerous references to larger works. In the second chapter he describes the general characteristics and effects of gunshot wounds. In this he defines local shock as a paralysis and anæsthesia due to vibrations set up by impact of the bullet acting on the finer nerve filaments and endings, and causing temporary loss of function in them. Its occurrence is most frequent in wounds received at short range, and it may last from a few hours to one or two days.

We are unable to agree with the author when he says that in aneurysmal varix there is no general distension of the distal part of the vein, and no swelling or pain in the limb. He explains the more frequent occurrence of injuries to the large nerve trunks as probably due to the greater frequency of concussion, the result of the high velocity and enormous energy of the modern bullet, and discusses the difficulty of diagnosticating partial destruction plus concussion from complete destruction. If some response to electrical excitation of the nerve above the lesion remains, this indicates either concussion or incomplete division of the nerve.

He divides fractures into three clinical classes, according to their severity—(1) Short range class, 200 yards range or less. In these cases comminution is extensive, often leading to shortening of one or more inches, there is extensive laceration of the soft parts, often a typical "explosive"

effect, and the wound frequently suppurates. (2) Fractures at medium range, 300–800 yards. Here the exit wound is usually large, but not explosive, the laceration of the soft parts is much less, and the fracture is commonly of the stellate or butterfly type. (3) Long range fractures, 900 yards or upwards. Here the exit wound may be as small as the entrance, the damage to the soft parts is slight, the bone fragments are large, and often not completely separated, the wedge type of fracture is seen, and the bullet often lodges. With small bore bullets fissures very rarely extend into joints, but with larger bullets and shell fragments they often do. In septic cases exploration and removal of separated fragments is necessary to prevent long-continued trouble from necrosis, but in aseptic cases this is seldom required.

In the case of spinal injuries the concussion effects of small bore bullets at short range more than make up for the slighter damage they do to the bone, as severe concussion destroys the cord as certainly as actual division. These are the most hopeless of all gunshot injuries. In South Africa there were 102 deaths out of 158 cases, and in Cuba 27 out of 36. The damage to the spinal cord is often out of all proportion to the slight injury to the bone. It is practically impossible to distinguish between symptoms due to concussion and those due to direct injury of the cord, and only exceptionally can concussion effects be distinguished from compression by hæmorrhage or displaced bone. Hence the diagnosis of the nature of the lesion is extremely difficult and the indications for operative treatment is uncertain. Compression of the cord is very rare ; it may be due to hæmorrhage, displaced fragment of bone, or possibly to a lodged bullet ; it is the only condition in which operation can do any good whatever.

With regard to abdominal wounds, the important practical point in diagnosis and prognosis is to distinguish, if possible, between the cases that are likely to recover spontaneously and those that will go on to general peritonitis. Considered from this standpoint all penetrating wounds of the abdomen, excluding extra-peritoneal wound of the large intestine, fall into three main classes—(1) Cases that die early either on the field, or shortly after reaching the field ambulance, from shock and hæmorrhage. These are the most severe injuries,

and include most of the wounds from large missiles. Most of these are hopeless from the first ; the victims may be looked upon as mortally wounded, and are beyond surgical aid, except in a very few instances where arrest of hæmorrhage may possibly save life. (2) Cases in which the injury is not immediately fatal, but general peritonitis follows, and death results in from three days to a week. (3) Cases that do not develop general peritonitis, and recover spontaneously, often with very slight symptoms. The distinction between these last two classes of cases, in the early stage, is usually impossible. If exploratory laparotomy were justifiable it would be the only means of settling the question, but, unfortunately, experience has abundantly proved that laparotomy in the field is more dangerous than the gunshot wound for which it is performed, and in most cases the onset of peritonitis, or its failure to appear, is the only thing that settles what the fate of the patient will be. Many surgeons of great experience who saw large numbers of gunshot wounds of the abdomen in South Africa admitted that no amount of experience of these cases enabled them to form any opinion as to the course that a perforating gunshot wound of the abdomen would follow. The question of operation has been much discussed, and all authorities are agreed that laparotomy in the field is justified only in exceptional circumstances. The ordinary rule of treatment in such cases under peace conditions would, of course, be to open the abdomen as soon as possible and repair the damage to the injured viscera. Experience has shown that this rule must be considerably modified in dealing with gunshot wounds under the conditions prevailing in the field. Cases are often brought in after the most favourable time has passed, the injuries are too extensive, and it is often necessary to move the patients too soon after the operation. Aseptic work is often practically impossible, and there is the pressure of other cases which are more likely to derive benefit from the attention of the surgeon. The treatment of these cases may be summed up in the words—rest, starvation, and opium.

There are figures and illustrations throughout the book, those in the chapter on fractures being particularly good.

We can thoroughly recommend a perusal of this book both

for pleasure and instruction not only to military surgeons, but also to those in civil practice.

The Arteries of the Gastro-Intestinal Tract with Inosculation Circle. By Byrom Robinson, B.S., M.D., Professor of Gynæcology, Chicago College. Chicago: Chicago Medical Book Co.

We have received an anatomical monograph by an American author, Dr. Byrom Robinson, a gynæcologist of Chicago College of Medicine and Surgery, entitled "The Arteries of the Gastro-Intestinal Tract with Inosculation Circle." The illustrations included in the volume are very numerous, and although of a diagrammatic nature they show considerable detail, are well drawn, and rather attractive. The term "inosculation circle" is applied by the author to the larger and more important examples of free communication between the arteries which supply blood to the gastro-intestinal tract. Thus the anastomosis along the lesser curvature of the stomach is termed by Dr. Robinson the "Proximal Gastric Circle," and the loop formed by the union of the terminal branch of the superior mesenteric with a branch of the ileo-colic artery is named the "Ileo-colic Circle." The author seems to imply that by giving names to these loops of communication he has discovered them. If he had been content to publish the results of his labour (the dissection of sixty-five subjects) in readable form, we feel sure that his work would have met with considerable approval. The many repetitions in the text of the same theme, the spun-out descriptions, the bombastic expressions, coupled with the large number of mistakes in spelling and printer's errors, would weary any reader. One quotation, from page 133, will illustrate our meaning. [The italics are ours.]

"'The ileo-colic circle' is one of the most important vascular landmarks especially in relation to the dangerous and treacherous appendix—dangerous because perityphlitis kills, and treacherous because its capricious *cause* cannot be prognosed.

"I find no reference in literature to the '*ielocolic* circle.' It is a result of my personal original investigations. I la[illegible]

it in the professional current to begin its endless journey. I predict that it will withstand the uncertain *vicisitudes* of fortune equally well with the circle of Willis, and be of more practical value to mankind."

If Dr. Atkinson, who has written the introduction to the volume, which consists mainly of a eulogy on the author, his friend, had helped him with the proof-sheets instead it would have been better. We cannot promise a good sale for the book in this country, where English composition is judged not by the length of the words employed, but by the clearness and simplicity of the style.

Lessons in Disinfection and Sterilisation. An Elementary Course of Bacteriology, together with a Scheme of Practical Experiments Illustrating the Subject-matter. By F. W. ANDREWES, M.A., M.D. Oxon., F.R.C.P. Lond., D.P.H. Cantab.; Lecturer on Pathology; Pathologist and Sanitary Officer to St. Bartholomew's Hospital, London. Second Edition. London: J. & A. Churchill. 1909. Pp. 222.

WE heartily commend this little book to all who require a concise knowledge of the principles of disinfection and sterilisation. Written primarily as a handbook for nurses, it has a wider field of usefulness. Practitioners will find much in its pages which will aid them in their daily work to use disinfectants rationally and to depend less on convention and ritual.

In four very readable "lessons" the author discusses the general nature and classification of micro-organisms, the growth of bacteria—their requirements and distribution in Nature, the chemical activities of bacteria and their power of producing disease, and the artificial cultivation of bacteria. The concluding "lessons" deal with disinfection by heat and by chemicals, aërial disinfection and the sterilisation of fluids by filtration, disinfection in surgery and midwifery, and disinfection in medical cases.

We know of no book of similar size in which these subjects are so lucidly dealt with, and although some of our most cherished ideas in regard to chemical disinfection are shown to rest on a slender foundation, we feel grateful for the instruction which we have derived from its pages.

The practical exercises at the end of the work should prove useful, while the section on the standardisation of chemical disinfectants explains the principles on which the system of Messrs. Rideal and Walker is based.

A Handbook of Diseases of the Nose and Throat. By EUGENE S. YONGE, M.D. (Edin.). Edinburgh and London: William Green & Sons. 1909. 8vo. Pp. ix + 407.

IT is hard to know whether to be glad or sorry when one is handed a new text-book on one's own special subject, and the author deliberately designates it for use in general practice; there are so many of these, excellent and useful, that one wonders if there is any room for any more. That knowledge of this sort is useful and indeed essential for those engaged in general practice needs no proof, and the more knowledge the general practitioner has of the diseases peculiar to the nose and throat the better, both for his patients and for his friend who specialises in these departments. It is difficult to take out for commendation any special chapter, as the book is thoroughly well written and up to date in most respects, though hardly sufficient mention is made of the advance in œsophagoscopy and bronchoscopy. The colour drawings are of very high order, and should prove of use in assisting diagnosis. The artist has succeeded particularly well in showing some pictures of various affections seen through the anterior nares; as a rule these are so indistinct as to be useless. There are short chapters at the end of the book dealing with some of the more general diseases as they affect the throat—for example, gout—these will be found useful.

Clinical Manual for the Study of Diseases of the Throat. By JAMES WALKER DOWNIE, M.B., F.F.P.S.G. Second Edition. Glasgow: James MacLehose & Sons. 1909. Cr. 8vo. Pp. xviii + 432.

A CONSIDERABLE increase in size compared with the first edition is at once noticeable, yet the book is of convenient size for quick reference. Special praise must be given to the colour illustrations, which are excellent, and give the colour

values better than is usually the case ; the fact that of necessity one views the larynx with reflected artificial light and the picture by ordinary daylight presents a great difficulty to the artist, who, while wishing to faithfully record the colour seen, must allow for the fact that it is afterwards viewed by a different light. All the various subjects are fully dealt with without long explanations of the operative part, but a criticism must be recorded that it is extremely difficult to deal with throat affections without also describing the nasal ones, which so frequently are their forerunners and their actual cause. Hardly enough has been said to properly indicate to one who has never seen them the great advances made in the œsophagoscope and bronchoscope and their application to the diagnosis and removal of foreign bodies. The description of diphtheria and its differential diagnosis is particularly good, more especially as we nowadays generally see a less typical diphtheria than was formerly the case, and thus it is more easily confounded with other conditions or overlooked. On the whole, therefore, Dr. Downie is to be congratulated on the improvement in his book.

Marine Climates in the Treatment of Tuberculosis. By WILLIAM EWART, M.D. Cantab. et Dunelm, F.R.C.P. Lond., M.R.C.S. Eng. ; Senior Physician to St. George's Hospital and to the Belgrave Hospital for Children. London : Baillière, Tindall & Cox. 1907. Pp. 48.

THIS little book is the text of Dr. Ewart's opening Address delivered at the Meeting of the British Balneological and Climatological Society at Hastings. It contains some hints which may be useful to those who are interested in recent developments of the crusade against tuberculosis in Ireland.

While efforts are being made to procure disused coastguard stations in various situations around the coast for the purpose of transforming them into " rest homes," " preventive homes," and sanatoriums, it behoves us to consider rationally the suitability of each station to the purpose for which it is destined, and the general limitations of the treatment of active tubercle by marine climates. In this regard Dr. Ewart's address may be of some aid.

The practical conclusions which he arrives at in regard to the marine climatic treatment are these :—

(1) All cases of surgical tuberculosis and scrofula are suitable.

(2) All "latent" or "threatened" cases of tuberculosis pulmonalis are suitable.

(3) Early cases of "declared tuberculosis," or of "declared phthisis pulmonalis," are debatable. They are all fit to try the mountain cure, but failing this not all of them will benefit most at the seaside, and more equable climates may be indicated.

(4) The suitability of cases of "advanced phthisis" can be decided only in relation to the existing prognosis and to personal toleration and preference in regard to climate.

(5) There are some temperaments for which seaside air is specially favourable and may be of positive advantage even in the later stages of "chronic quiescent phthisis."

As homes for the treatment of surgical tuberculosis and scrofula, and as "Preventoriums" (horrid word!), some of the suggested coastguard stations may be suitable and desirable, but as sanatoriums for cases of active pulmonary tubercle their value is much more questionable, while the active opposition shown in some places to their use for this purpose should be duly considered before the buildings suggested are acquired. There is a crying need in Ireland for sanatoriums, but the selection of unsuitable sites at this juncture may arouse doubts as to the advantages of this method of treatment, and set back the whole movement in the country.

If Dr. Ewart's address helps us to a clearer understanding of the principles involved, it should be a real boon to all who are interested in the tuberculosis problem.

Dictionary of Ophthalmic Terms. By Edward Magennis, M.D., D.P.H. Bristol : John Wright & Sons. 1909. Pp. 67.

This little book, comprising some sixty pages, furnishes in a very concise form the explanation of all the commoner and most of the rarer terms employed in relation to the anatomy,

physiology, and pathology of ophthalmic practice. To this are added some useful hints on sight-testing and errors of refraction which, together with the appended list of formulæ for diseases of the eye, should make this *multum in parvo* book of Dr. Magennis of great benefit and assistance to the general practitioner who undertakes the treatment of such cases.

Unfortunately, in places the desire to keep the book within small limits has induced the author to sacrifice distinctness of definition for the sake of brevity.

RECENT WORKS ON ANATOMY.

1. *Text-book of Anatomy.* Edited by D. J. Cunningham, F.R.S., D.Sc.; Professor of Anatomy, University of Edinburgh. Third Edition. Henry Frowde; Hodder & Stoughton. 1909. 8vo. Pp. 1427.

2. *Anatomy: Descriptive and Applied.* By Henry Gray, F.R.S., formerly Fellow of the Royal College of Surgeons and Lecturer on Anatomy at St. George's Hospital Medical School. Seventeenth Edition. Edited by Robert Howden, M.A., M.B., C.M., Professor of Anatomy in the University of Durham. With 1,032 Illustrations. London, New York, Bombay and Calcutta: Longmans, Green & Co. 1909. 8vo. Pp. xiii + 1296.

1. It is with great pleasure that at the commencement of the anatomical year we welcome the appearance of a third edition of Cunningham's "Text-book of Anatomy." The necessity of producing this edition within seven years of its initial publication bears testimony to the high standard of the work, and we hope is an indication that the book will continue to meet with approval and to carry on the high traditions of the Dublin School, from which it emanated, now that its distinguished and much revered Editor is, alas! no longer with us.

Of the numerous writers who contributed chapters to the first edition, in 1902, the two most gifted have passed away, both at that date Professors of Anatomy in Dublin Schools of Medicine, Professor Birmingham and Professor Cunningham.

From the pen of the former came what was then, and is still in our opinion, the best chapter in the entire work, that on the Digestive System; while to the latter was due the masterful conception and successful production of the completed work. As one who was intimately associated with Professor Cunningham during the year in which the book first saw the light, the present reviewer can bear witness to the constant determination of the Editor to make his own and every other contribution maintain an almost ideal standard of excellence, and to his genius in combining the work of many authors into a compact and homogeneous whole. Every page, both then and now, bears the stamp of the man, and even in the Preface to the present edition, almost the last words that he wrote, his wonderful personality can be felt.

An important change in the present edition is the adoption of the Basle nomenclature in those sections which have been re-written, and in order to prevent any confusion a glossary of anatomical terminology with the new terms and the older equivalents is placed at the beginning of the book. The section on Osteology has been completely revised, and several of the illustrations have been improved by the use of colours. Some valuable new illustrations have also been introduced. The numerous figures of the skull, as a whole, are specially worthy of notice, and the method of indicating the individual bones by different colours should prove of the greatest assistance to students. An appendix to this section contains much valuable material on the architecture of bones, variations in the skeleton, anthropometrical methods, and the morphology of the limbs. To the student or practitioner reading for the higher examinations this arrangement will obviate the necessity of reading a separate book on these subjects.

The section on Myology has also been practically re-written, and many of the illustrations have been improved. To those who were brought up on the English text-books of anatomy of fifteen or twenty years ago the present illustrations should prove a revelation. It is hardly too much to say that by the use of the present figures one could almost learn anatomy without dissecting. The figures are both diagrammatic in their clearness and true to nature. The remainder of the book is practically unaltered, and does not require any special com-

ment. The already elaborate index has been made even more complete, and facility of reference is increased by printing under each entry in heavy type the number of the page on which the structure in question is most exhaustively dealt with.

Any special commendation of the work is uncalled for: it commends itself.

2. The seventeenth edition of "Gray's Anatomy" well maintains the reputation of the work. The text has been carefully revised, and in some sections re-arranged. The title "Surgical Anatomy" has been replaced by that of "Applied Anatomy," the notes on which have been revised by Mr. A. J. Jex-Blake, M.A., M.B., M.R.C.P., Assistant Physician to St. George's Hospital, and by Mr. W. Fedde Fedden, M.S., F.R.C.S., Assistant Surgeon and Lecturer on Surgical Anatomy, St. George's Hospital.

The B. N. A. (Basle Anatomical Nomenclature) terminology has been added in brackets after the names commonly used by British anatomists. About two hundred additional engravings have been introduced—chiefly in the sections relating to embryology, angiology, neurology and splanchnology. Of these, the greater number have been drawn from original preparations, a few have been borrowed from standard works, and some have been copied from models by His, Keibel and others. Mr. Frank Howson, M.A., Lecturer on Physiology in the University of Durham, revised the histological part of the work, and furnished microscopic slides for drawings; while Dr. J. Dunlop Lickley, Demonstrator of Anatomy in the University of Durham College of Medicine, revised the text and prepared the index, besides making dissections for the purposes of illustration.

Beyond the foregoing statement as to the changes in this seventeenth edition of "Gray's Anatomy," little remains for the reviewer to write. The reprint of the dedication of the first edition of the work to "Sir Benjamin Collins Brodie Bart., F.R.S., D.C.L.," carries us back to the time when that great surgeon's name was a household word in British Surgery. That a work on anatomy should have survived so long speaks volumes for its author's fame. "Gray" in the twentieth century is just as much the guide, philosopher and friend of

the medical student as it was in the olden days of the early Victorian Era—fifty-one years ago—when the first edition of the work was published.

The Dublin University Calendar for the Year 1909–1910, to which are added the Ordinary Papers set in the Year 1908–1909. Vol. I. Dublin: Printed at the University Press. 1909. 8vo. Pp. viii + 61* + 468.

The first volume of the University Calendar for the coming year appeared as usual in the Long Vacation. It contains full information respecting the ordinary and honour Courses in Arts and in the Professional Schools. The papers set at the various ordinary examinations in Arts held during the past academic years are also included in the volume, which forms a mine of information for both graduates and undergraduates.

The Editor, Mr. Matthew W. J. Fry, M.A., Fellow of Trinity College, is to be congratulated on the manner in which the Calendar has been brought out.

Diseases of the Stomach: A Manual for Practitioners and Students. By S. H. Habershon, M.D., F.R.C.P. London: Cassell & Co. 1909. Pp. xii + 565.

This is a handy little book of 565 pages, and constitutes a complete, but not too elaborate, account of the diseases of the stomach. The first few chapters are devoted to a description of the normal anatomy of the stomach and to the physiology of gastric digestion. We are glad to notice that the author recognises the value of the late Professor Birmingham's work on the form and position of the stomach, and indeed in his description he closely follows that accurate and careful observer. The physiology is quite up to date, due attention being paid to the researches initiated by Pawlow. Chapters on diet in disease, on the examination of the stomach and of the gastric contents follow. Judging from these Dr. Habershon is essentially a practical physician, and finds no use for difficult and complicated methods of diagnosis when simpler, and not less reliable, means can be employed. Thus in speaking

of transillumination of the stomach he says that very little can be discovered in this way that cannot be detected by palpation and percussion, and with this expression of opinion we are in hearty agreement. Gastroscopy, also, he thinks little of as a general aid, though he admits that a specialist in the use of the instrument may at times be able to throw light on an obscure case. Examination by the bismuth and Röntgen ray method is, however, we think passed over too lightly, as in institutions where there is an X-ray installation valuable information may be obtained by this means without much trouble to either the patient or the investigator.

The practical nature of the work is depicted on every page, and nowhere more so than in two chapters on the symptoms of gastric affections, for which the author seems inclined to apologise in his preface. These two chapters constitute a sort of diagnostic index to the remainder of the work, and should, as the author hopes, prove useful for diagnosis and reference. In dealing with dyspepsia the ideal is sacrificed to the actual. Much as one may wish to classify cases under rigid scientific headings, it is better, if such be impossible, to admit the fact and to adopt a classification in accordance with what one meets in practice. This is what the author has done, and though his classification on page 192 necessarily results in some indefiniteness, and perhaps a little diffuseness of description, we much prefer it to the simpler, more ideal, but we believe less correct, classification referred to in the preceding page. We commend these chapters on dyspepsia to the careful attention of every medical man. They contain a good account of what is known regarding the subject, and nothing beyond. It is the little more that so often leads to confusion of thought and inability to correlate what one sees with what one reads. The chapters on organic disease of the stomach do not call for any special notice ; they are all practical, and written in an easy style. Some fault might, perhaps, be found with the arrangement, and more particularly with the way in which the same subject is dealt with in two or three places in the book ; for example, carcinoma of the stomach is dealt with under stenosis of the pylorus, and again under tumours of the stomach. Having regard, however, to the character of the work, we are on the

whole of opinion that this arrangement is wise, inasmuch as it causes each section of the volume to be complete in itself. The book contains nineteen plates, eight of which are in colour, and all of which are carefully and artistically executed. We cordially recommend the work to the notice of our readers.

The Diseases of Infancy and Childhood. By Emmett Holt, M.D., Sc.D., LL.D. Fifth Edition. New York and London: D. Appleton & Co. 1909. Cr. 8vo. Pp. 1174.

It was a pleasant surprise to see a new edition of this valuable work so soon, and Dr. Holt is to be congratulated on never letting his readers feel that a single chapter in his book is anything but up to date. Though barely twelve years old, it has now taken its place so unmistakably as a classic in pædiatrics that any general criticism would be out of place here. It will suffice to point out the alterations made in the present edition. These are chiefly found in the chapters on tuberculosis, the various forms of meningitis, and acute poliomyelitis. In the first of these a very valuable account is given of the various tuberculin tests—von Perquet's, Calmette's, Hamburger's, and Moro's. The technique is carefully described in each case, and subsequently a general comparison is made of their values.

The division on tubercular meningitis shows that the author has considerably modified his views with regard to the nature of the fluid removed by lumbar puncture. He now states that tubercle bacilli are invariably present, and that the fluid may be turbid, whereas formerly both these facts were considered exceptional. These changes have caused him to relinquish an otherwise valuable little table, showing the difference between the tubercular and cerebro-spinal forms of the disease, which we venture to think is a loss.

The chief addition to the division on cerebro-spinal meningitis is, of course, an account of Flexner's work at the Rockefeller Institute. The reports of the serum developed by him are very encouraging, the mortality in 600 cases so treated being only 30 per cent., as against 70 per cent. before the serum was used.

Another valuable paragraph in the new volume is a *résumé*

of the work done by Harbitz and Scheel on the pathology of infantile paralysis, the result of which seems to bring the disease into close relationship with acute bulbar paralysis and acute polioencephalitis inferior.

Nothing of consequence has been added to the chapter on nutrition, which was already too good to be improved upon. We should have been glad, however, to see the short six pages on rheumatism enlarged somewhat in the present edition. This important malady of childhood is included in a short chapter on "other general diseases," and the whole microbic theory of its origin is dismissed in four lines. Another improvement we should be glad to see would be the introduction of some plates (of the same excellence as others in the book) into the chapter on skin diseases. In this section plates are of particular service, and there are none. Some of the illustrations in the text (notably, Fig. 10) are beginning to show the effects of long and faithful service, but for the rest, even in these minor matters, the book more than maintains the high standard of excellence shown by its predecessor.

Surgical Anæsthesia. By H. BELLAMY GARDNER, M.R.C.S., L.R.C.P. London. London: Baillière, Tindall & Cox. 1909. 8vo. Pp. xii + 240.

AT the present time the subject of the safe administration of anæsthetics for surgical operations is undergoing review, and it is hoped that some real advance will be the result. Attempts have been made on more than one occasion to settle the matter, but in spite of the labours of the various Commissions the death-rate during surgical anæsthesia remains unpleasantly high. In estimating the safety of anæsthesia we have always maintained that it is necessary to take into consideration many other factors besides the number of deaths. It is probable that many more persons are anæsthetised now than were anæsthetised forty years ago, and probably the number is still increasing. Then also much graver operations are now undertaken than formerly, and many of these in the case of patients whose condition a few years ago would have been considered a contraindication to any operation. An increase of the number of deaths during anæsthesia under

these circumstances does not necessarily mean that anæsthesia at the present day is less safe than it was formerly. A certain number of deaths are, however, recorded every year of patients apparently in perfect health, and operated on for some slight ailment—deaths which must be attributed wholly to the anæsthetic. It is such deaths that are the opprobrium of our art, and we should not rest satisfied till they entirely disappear.

For years past anæsthetists have been pressing for a reform in the medical curriculum, which seems obvious and necessary, and yet promises most fruitful results. Up to this they have largely pressed in vain. The reform we speak of is that all medical practitioners should receive some instruction in the general principles of anæsthesia and in the methods of its application in practice. Anæsthetists have done what they could in the matter, for not satisfied with urging the claim on the deaf ears of those in charge of the teaching of the students, they have provided the means of instruction for those who wished to avail themselves of it. During the past fifteen years many really admirable text-books have appeared, and no one can now complain of lack of means to study the subject. Among the writers who have helped to establish this desirable state of things our author occupies no mean position. In his little book, "The Asphyxial Factor in Anæsthesia," published in 1901, Mr. Gardner sounded what we believe to be the key-note in safe anæsthesia, and in the book before us he again insists on the necessity of recognising this as the most important sign of danger in the administration of every anæsthetic. Patients may not often die under anæsthetics from anoxæmia, but they very seldom die without having first exhibited some signs of it, signs too that had they been appreciated and acted on would have enabled preventive measures to have been effectually adopted. It is the thorough and whole-hearted adoption of this principle which makes Mr. Gardner's teaching so valuable, and which would enable us to recommend his book with the utmost confidence to students were it in other respects much less good than it is.

There is one point on which we could have wished that Mr. Gardner had adopted a somewhat different attitude, and that is the open method of the administration of ether. To

our mind the adoption of this method has altered entirely the position of ether as an anæsthetic. It has been stated by a writer of much experience that to ether administered in this way there are no contraindications, and though we may not care to subscribe to this position completely, yet it cannot be denied that our view of these contraindications must be completely modified from what it was under the older methods. Administered in this way ether is a suitable anæsthetic for the very young and the very old, as well as for those with conditions of the organs of respiration which formerly were rightly considered an absolute bar to ether anæsthesia. Dr. Gardner seems to recognise this, but the recognition has not permeated his teaching as we think it should, else we should less frequently have him recommending chloroform and the C_1 E_2 mixture. The more efficient the anæsthetist becomes in the use of ether, and especially in its use by the open method, the less frequently will he have recourse to chloroform and the safer will be his patients.

We cannot altogether agree with Mr. Gardner in the method which he adopts for estimating the depth of anæsthesia. We consider the size of the pupil a much better guide than the corneal reflex, and the frequent touching of the delicate cornea, no matter how carefully done, is not a practice that we can recommend. With regard to the pupil we consider the teaching of Dr. Gill in his "$CHCl_3$ Problem" much sounder than that of Mr. Gardner.

We regret to have to say that in more than one place we found this admirable little book marred by bad grammar—a condition of things that does not tend to the credit of the profession. T. P. C. K.

LITERARY NOTE.

A NEW edition of "Manual of Military Ophthalmology," by M. T. Yarr, F.R.C.S.I., Lieut.-Colonel Royal Army Medical Corps; Member of the Ophthalmological Society of Great Britain and Ireland, was published by Messrs. Cassell & Co., Ltd., on October 15th.

PART III.

SPECIAL REPORTS.

REPORT ON MEDICINE.

By T. Gillman Moorhead, M.D., F.R.C.P.I., Physician to the Royal City of Dublin Hospital.

I. INTRAVENOUS INJECTIONS OF ADRENALIN IN HEART FAILURE.

John has investigated the action of intravenous injections of from ½ to 1 cc.m. of adrenalin in cases of cardiac failure and of shock, and has come to the conclusion that they will frequently restore life to moribund patients, even after all other therapeutic means have failed. He has frequently given it in the collapsed condition of pneumonia, in heart failure following lysol poisoning, in pleurisy, and in many other conditions. The effect is instantaneous. The face and the mucous membranes become blanched, the blood pressure rises, and the pulse becomes slowed. This improvement may last from two to three hours. The writer believes that the beneficial effects observed arise partly from the vaso-constrictive action of the adrenalin and partly from a direct stimulating action in the heart muscle or cardiac ganglia. He also suggests that some forms of cardiac failure may be due to the want of sufficient suprarenal secretion in the circulation. If this is so the good results are even more readily understandable.—*Münch. med. Woch.* 1909. No. 24.

II. EARLY DIAGNOSIS OF GASTRIC CARCINOMA.

Marini discusses the cytological examination of vomited material and of fluid obtained by washing out the stomach, and maintains that an aid may be obtained by this means in the diagnosis of suspected carcinoma ventriculi. He has himself examined the contents of the stomach in thirty-seven

cases of carcinoma, and while he has only found fragments of tumour in three cases, he has been able to detect isolated tumour cells in thirty-two cases. He describes the tumour cells as consisting of flattened or cylindrical epithelium, and readily distinguishable from the normal cells of the œsophageal and gastric mucous membrane. The exact type of cell of course varies with the type of carcinoma present. He regards the detection of these cells as the most reliable means of making a diagnosis independent of performing an exploratory laparotomy.—*Archiv. für Verdauungskrankheit.* Bd. XV. Hft. 3.

III. MENINGITIS CAUSED BY A PARATYPHOID BACILLUS.

Arzt and Borse describe two cases of meningitis occurring in children, in both of which organisms belonging to the paratyphoid group were isolated *post-mortem*. In one of the cases the bacillus was identified as that described by Schottmüller, while in the other an organism was isolated which morphologically and in its cultural characteristics belonged to the paratyphoid group, but which they were unable to completely identify owing to the failure of their agglutination tests. In both cases it seemed probable that the origin of the infection was the alimentary tract, and that the organism had reached the meninges by either the vascular or the lymphatic tract. In both cases a fibrino-purulent meningitis was present. The authors think it likely that this variety of meningitis is comparatively common, and suggest that in the future a diagnosis may be arrived at by testing the agglutination powers of the blood in suspected cases.

IV. PENETRATION OF VAPOURISED LIQUIDS INTO THE AIR PASSAGES.

Carey has investigated the lungs of animals who were compelled to inhale for a period of two hours air through which a fine spray of arsenic-containing water was passed. He finds that such lungs contain three times as much arsenic as the lungs of control animals, and concludes in consequence that drugs dissolved in water, which is then finely vapourised or aërised and used as an inhalation, can be drawn into the deepest parts of the lungs. Similar experiments by

Emmerich and Kuess lead to the same conclusion.—*Compt. Rendus.* 1909. No. 12.

V. POLYSEROSITIS.

Duker reports a case of this disease occurring in a girl, aged fifteen, who came under observation suffering from ascites and pain in the right side of the abdomen. For some months previously the abdominal distension had apparently been alternately improving and again relapsing. It now rapidly increased, and both pleural cavities also became waterlogged, while a slight amount of jaundice also appeared, accompanied by enlargement of the liver and the spleen. All the symptoms except the ascites rapidly improved under treatment by sodium salicylate, and for a period of five months the patient remained subjectively well. During this time von Perquet's skin reaction gave a positive result. The next symptom to appear was diffuse erythema multiforme, and soon afterwards there were signs of cardiac failure. Both pleural cavities again became filled with fluid, the effusion in the right side being hæmorrhagic. A pericardial effusion also took place ; and after several severe attacks of hæmoptysis the patient died. The necropsy revealed universal increase in the connective tissue of the serous membranes, with in addition tubercular nodules in the lower lobe of the left lung and tubercular bronchial glands ; the liver showed typical perihipatitis. The conclusion drawn by the author is that the case was primarily tubercular, and that the universal serositis was itself of a tubercular nature.—*Nederl. Tigdschr. voor Genuskunde.* 1909. I. 394.

VI. HIRSCHSPRUNG'S DISEASE.

Cerné-Delaforge reports a case of idiopathic dilatation of the colon occurring in a badly developed girl, aged twenty-one years. She came under observation suffering from enormous distension of the abdomen, with displacement of the heart and liver upwards. Since birth constipation had been more or less chronic, but had been overcome by the use of various remedies. During the last few days, however, the obstruction had become complete. An operation was performed, but owing to the distension no diagnosis could be made, and in consequence intestinal drainage was attempted by the

formation of an artificial anus. The distension, however, was not relieved ; peritonitis ensued, and death took place a few days later. At the *post-mortem* the small intestine, the ascending and transverse colons were all found to be normal, but the descending colon was found to be enormously enlarged and to fill the greater part of the abdominal cavity and the entire pelvis. It was filled with hard masses of fæces. The wall was nearly a centimetre in thickness, the muscular coat forming ¼th of the entire thickness, and the connective tissue coats the remainder. The mucous membrane showed diffuse cell infiltration. A radioscopic examination prior to operation had suggested the diagnosis of Hirschsprung's disease.

VII. THE SALOMON TEST FOR CARCINOMA OF THE STOMACH.

Goodman has carefully investigated this test, and comes to the conclusion that it is far from reliable. Both normal and non-carcinomatous cases may give more than twenty milligrammes of nitrogen per 100 cubic centimetres of water. Furthermore, he finds that some cases of carcinoma do not give a positive reaction, and that the test is invariably positive only when ulceration of the carcinoma exists. The test must therefore be employed only along with other evidence. The writer points out that the amount of phosphates contained in the stomach washings is in non-carcinomatous cases under 10 milligrammes per 100 cubic centimetres of water, while in carcinomatous cases this number is usually exceeded.—*Univ. of Pennsylvania Med. Bull.* May, 1909.

VIII. DIABETES AND THE ISLANDS OF LANGERHANS.

Macallum (*Johns Hopkins Hospital Bulletin*, September, 1909) has investigated by an experimental method the relation existing between glycosuria and the cell islets of the pancreas. He summarises his results as follows :—When a portion of the pancreas is separated from the rest, and its duct is ligated, it undergoes extensive atrophy, a tissue remaining which is apparently composed of enlarged islands of Langerhans and the remnants of the pancreatic ducts. If the rest of the pancreas be removed, this atrophied remnant is capable of warding off glycosuria even when considerable amounts of dextrose are injected. When it itself is removed also, glycosuria

appears at once. Whether the glycosuria would persist until the death of the animal remains to be determined, but this experiment suggests the possibility that there may be some compensation on the part of other organs both with regard to glycosuria and the faulty assimilation of fat after the loss of the pancreas. The experiment seems also to demonstrate the specific control of carbohydrate metabolism by the islands of Langerhans.

IX. NECESSITY FOR ROUTINE EXAMINATION OF THE RECTUM IN INTESTINAL DISEASES.

Dr. Dwight Henderson Murray, M.D., Syracuse, N.Y., read a paper at the American Proctologic Society's meeting last June, which was one of special interest to the general practitioner, and emphasised the necessity for rectal and colonic examinations in all cases of protracted diseases of the digestive tract, whether special symptoms are directed to the rectum and colon or not. In many cases of gastro-intestinal disturbances the real cause, if sought for, may be found in the rectum or colon, though the patient gives no symptoms of such rectal trouble. These are amenable to local treatment. A thorough examination, including rectal and bacteriological examination of the stools, should be made in every chronic intestinal case before beginning treatment. The author advised that physicians should not treat patients who refuse to allow the necessary examination. He reported illustrative cases, including so-called intestinal indigestion and dyspepsia, chronic diarrhœa, cancer of the sigmoid, and internal hæmorrhoids. A case of internal hæmorrhoids, where the attending physician had entirely neglected to examine the rectum, had been treated by lavage seven months, for so-called dyspepsia and dilatation of the stomach, without benefit, and the patient was told that a gastro-enterostomy was the only hope of cure. After an operation for radical removal of the internal hæmorrhoids he was cured of his dyspepsia. A careful diagnosis would have saved this patient years of suffering. The patient's life in one instance (possibly), and certainly the general reputation of the medical profession in all of the cases, would have been better had the patients been carefully examined. This neglect was found to be true not only of the physicians

in this country, but of physicians in Europe, who had treated some of the cases in the list reported. The author made a plea not only for local, but also for bacteriological, examination, claiming that every case of diarrhœa, continuing for a longer time than is sufficient for nature to eliminate the irritating material that may be causing it, is due to a more serious disease.

X. ANÆMIA SPLENICA INFANTUM.

Fürrer describes carefully two cases of von Jaksch's anæmia which had been under his observation for a prolonged period, and one of which came to autopsy. The writer has come to the conclusion that this anæmia is not a definite morbid entity, but merely a symptom-complex, which can be brought about by several different causes, such as rickets, syphilis, and gastro-enteric intoxications. The first effect of these toxins is to produce a profound anæmia, accompanied by an intense compensatory activity of the marrow. Later the same toxins exert their influence on those organs, which during fœtal life produced red blood corpuscles, mainly on the spleen, liver, and lymph glands, with the result that these organs again become active and the blood itself assumes an embryonic type. Such a reversion to a fœtal type of blood formation he believes to be only possible in early infancy. The prognosis he believes to depend not on the blood picture, nor on the general symptoms, but on the cause which has brought both about.—*Prag. med. Woch.* 1908. No. 17.

XI. KIDNEY COMPLICATIONS IN PNEUMONIA.

Monisset and Chalier, in an article in the *Lyon Médical*, point out that while it is the custom to consider specially the state of the heart muscle when attempting to give a prognosis in pneumonia cases, the state of the kidney is usually neglected. This they regard as a mistake, inasmuch as kidney complications are often met with. The pneumococcal nephritis falls into two groups, the first of which occurs during the actual course of the pneumonia, and the second at a much later period. In both the same pathological changes are observed—namely, subcapsular hæmorrhages, interstitial infiltration with epithelial degeneration and occasionally actual miliary abscesses.

Clinically, albuminuria accompanied by hæmaturia and the presence of casts constitutes the most important symptom. As regards prognosis, the first variety which occurs early either completely recovers or passes into a chronic condition; the second variety, which first shows itself during convalescence, is frequently fatal through uræmia.—*Lyon Médical.* May, 1909.

XII. EXCRETION OF ORGANIC ARSENICAL COMPOUNDS.

Fischer and Hoppe have investigated the excretion of atoxyl, arsacetin, and arsenophenyl glycin in the urine and the fæces. In all cases the arsenic was recognised by converting it into a magnesium salt, and volumetric determinations were also made. They find that atoxyl and arsacetin are rapidly excreted in the urine, and differ considerably in this respect from arsenophenyl glycin. The last named compound is retained within the body for from six to eight days; atoxyl is excreted in about three days, and arsacetin in two. This rate of excretion remains the same when the drugs are given either by the intra-muscular method or per rectum. Neither atoxyl nor arsacetin is excreted by the bowel, but considerable quantities of arsenophenyl glycin are got rid of by this channel. It is probable that during their stay in the body the arsenical compounds become united with lecithin.—*Münch. med. Woch.* 1909. No. 29.

LARCH HILL SANATORIUM.

We have just received the prospectus of the Larch Hill Sanatorium for tubercular cases. This sanatorium, which has been in existence for several years, has lately changed hands. It is beautifully situated amidst the Dublin Mountains, about eight miles from the city, and is at the commanding height of 800 feet above sea level. On three sides it is sheltered by the neighbouring hills, while to the north the plain of the Liffey is visible with Howth, and in the far distance the Mourne Mountains. There are numerous walks and drives in the vicinity, and the general hygienic arrangements appear to be admirable. We understand that the treatment adopted is to be modelled on the "Nordrach System."

PART IV.

MEDICAL MISCELLANY.

Reports, Transactions, and Scientific Intelligence.

Presidential Address.[a] By JOHN LENTAIGNE, P.R.C.S.I.; Surgeon to the Mater Misericordiæ Hospital.

BEFORE distributing the prizes, I wish to express our profound sorrow at the terrible loss that we have sustained by the death of our late Professor in Anatomy, Dr. Alexander Fraser, a man of brilliant talents and exceptional administrative ability, whose incessant and untiring industry have been a marvel to all who knew him. By his death each of us has lost a dear and valued friend, while to our School and College the loss, especially at this most grave crisis in their affairs, is absolutely incalculable. If such a thing were possible our sorrow is increased by the knowledge that it was to his constant and unsparing industry in their service, and his recklessly unselfish devotion to his work, that his untimely death was due.

I desire to congratulate the successful students who have been awarded prizes, and to express for myself and for the Council of the College our deep regret that the pecuniary rewards which it was possible for us to give for such excellent work as has been done should be so utterly inadequate, especially when compared with the rich prizes which are given by the State-endowed rival medical schools. We are now beginning a period of the gravest difficulty and danger for our school. If these difficulties were merely the result of fair competition—that is, of greater industry and successful work on the part of our rivals—we would not, we could not, complain; any such difficulties could be met in the future, as they had been met in the past, by equal or greater industry and effort on our part. Unhappily, our troubles are due to a very different cause. The danger arises from the fact that, as a result of a long existing political agitation, the Government

[a] Delivered at the Opening of the Winter Session of the Schools of Surgery of the Royal College of Surgeons in Ireland, on Friday, October 15th, 1909.

has carried an Act of Parliament which completes the endowment by the State of every other medical school in Ireland except our own, which has been carefully excluded from Government favours and left absolutely out in the cold. The Royal College of Surgeons have never found fault with the endowment of the other schools; medical education has grown with the vast progress of science to be such a difficult and financially unprofitable business, that it is right and proper that it should be assisted by the State when necessary. What we protest against is the unfairness and injustice of endowing one or more schools while absolutely ignoring the claims of another, which has done at least as good work, and against which no fault has been or could have been found in the past. These rival schools will now be free from all possibility of pecuniary embarrassment, they will be provided with abundant funds for the equipment of laboratories and class rooms, the salaries of their professors and lecturers will be paid for them, innumerable rich prizes will be offered as bribes to entice students, and, worst of all, they can outbid and undersell the School of the Royal College of Surgeons by lowering the fees for lectures, degrees and diplomas to such a point as must speedily starve and destroy our School. It is a matter of common knowledge that all these things are actually being done, and this with funds supplied by the State, which should protect the interests of all alike, and to which all who paid taxes were compelled to contribute.

The scandalous injustice and unfairness of the scheme were so patent that when the Bill for the formation and endowment of the new Universities, which were to take over and absorb the four existing medical schools in Ireland outside Trinity College, was being introduced, the President and Council of the Royal College of Surgeons approached the Government with the fullest confidence that we should only have to state our case in order to have our grievance remedied. We asked for such an endowment as would enable us to continue our work in the face of the new and increased competition, and the sum we applied for was absolutely insignificant compared with the huge grants which were being voted for educational purposes for the new Universities. In approaching the Government we felt all the more confident of success as the institution which we represented was one which we thought should surely have had the entire approval and support of the great English Liberal Party, an educational institution

with a continuous record for a hundred years of good work done, absolutely non-sectarian and non-political, a common meeting ground for men of every religion and every shade of political thought with equal privileges for all. Such an institution, in Ireland of all places in the world, must surely be maintained, and could not be allowed to perish, strangled by the competition of State-endowed rival schools, whose character in these respects was, to say the least of it, still to be revealed in the unknown future. The Royal College of Surgeons did not spare trouble, work, or expense in making our position clear to the Government. We sent several deputations to London, who spent endless weary hours in the Lobbies of the House of Commons interviewing innumerable members of Parliament, including the heads of both political Parties and the Chief Secretary for Ireland, and finally obtained an audience of the Prime Minister. Mr. Asquith paid in words a high and glowing tribute to the good work which had been done by the College and the School, but indeed he paid a very poor tribute to our intelligence, for he then proceeded to assure us that he did not think our School or College would suffer by the new competition, but that if it were proved later on that they were really damaged, as was feared, then the Government might possibly, though he would not promise it, reconsider the question. The result may be summed up in one word—failure. For all our trouble, loss of time and expense, the net result was only a number of high-flown complimentary phrases for the good work we had done. We must confess that we have utterly failed so far, and the reasons for that failure are not very clear to us. Perhaps it is because of our ignorance of politics and political measures. We are a non-political body and know little of such things. We have no solid religious or political party with votes in Parliament to push our cause. In our ignorance of politics we relied solely on the evident justice of our claim, but apparently that alone was of no use. In politics we really did not know where we were. We had thought we were approaching a Free Trade Government, but as far as the School of the Royal College of Surgeons was concerned, we might as well be under the narrowest adverse protectionist regime. For what was this scheme of State endowment of all the medical schools in Ireland but one but a protectionist job of the most extreme kind applied to a class of institutions for the teaching of a scientific profession?

The professors in our School have to live by the results of their

work in the School. How could they live if their classes were lured away from their School by rich bribes in the shape of prizes, by superior equipment of laboratories and class rooms, and by the lowering of fees for lectures, examinations, and degrees to a starvation point? You will, perhaps, understand my meaning better if I give you a picture of a similar state of affairs in commerce. There are half a dozen large drapery firms in Dublin. It is difficult to imagine it, but I would ask you to suppose that as a result of a politico-religious agitation the Government passed a Bill endowing all these firms except one, granting them money from the public funds, in which, in justice, all were entitled to share, to pay the salaries of the employees, the purchase of new and expensive materials, shop fittings, buildings, &c. Would not this be grossly unjust and unfair to the one firm which was excluded from the scheme? I have no doubt but that the employees of this firm would protest vigorously, and I scarcely think they could be expected to accept the Prime Minister's statement if he assured them that he did not believe they would be injured. They would be right to protest, for would it not be an intolerable outrage? The thing was so monstrous as to be actually incredible. Yet a thing which was so bad in commerce was worse when applied to an institution for the teaching of science; the employés in the ruined drapery firm might easily get employment again with the rival prosperous firms, but professors and teachers in a ruined medical school, when they have reached a certain age, can never hope to get employment in another school, least of all in a rival school which has grown great as a result of a politico-religious agitation. Well, this scandalous and almost incredible thing is actually being effected now, and so far there is no prospect of relief.

Our minds are clear, however, as to what should be our course of action. The Royal College of Surgeons are determined to spare no effort to maintain the highest possible standard of efficiency in our school. During the past two months we have expended large sums out of our scanty funded capital in improving the school, and we will do everything in our power to maintain the unequal struggle as long as it will be possible. Also we will agitate to the best of our limited ability, spreading the story of the wrong which has been done far and wide, and on every possible occasion, in the hope that for justice sake, or if not for justice, for common decency and for shame sake, the Government may be induced to take action to save our school before they have utterly

destroyed it, or if the present Government will do nothing, the next Government may be induced to remedy the evil done by their predecessors, and do justice to an old, honourable, and most useful institution. The President and Council have no private axe to grind in this matter; we are not the professors or examiners in the school, and we get no pecuniary benefit or advantage of any kind out of it or out of the College. We are therefore all the better fitted to defend it in this matter, and we promise that we will do so to the very utmost of our ability. My term of office as President will end in May next, but another will succeed me, and after him another again, and my successor and the Council will all continue the agitation until we get redress. Owing to the peculiar conditions of professional life in Ireland the interests of the Royal College of Surgeons are bound up in the school; indeed, its continued existence is dependent on it. Every one of its four hundred Fellows and every one of its three thousand Licentiates took oath when receiving his diploma always to uphold the honour and dignity of the College to the utmost of his ability. Well, we will abide by that oath.

THE "APENTA WATER" SPRINGS.

In connection with the Sixteenth International Medical Congress, held at Budapest, August 29th to September 4th of the present year, visits were paid to the "Apenta" springs, where the process of raising the bitter waters was shown, together with the ingenious machinery employed. In making wooden boxes the nails are driven in by an American machine. Then straw envelopes for placing round the bottles so as to prevent their breaking are also made by machinery. This is an English machine. A German machine pastes the labels on, and the machine for putting on the capsules is home-made. The visitors were especially shown the scrupulous cleanliness that prevails throughout and how the water does not come into contact with the hands of the workers. Nevertheless, medical surveillance is exercised over the employees, so that there shall be only healthy persons on the premises. During three or four days parties consisting of several hundred members of the Congress went to see these wells.—*The Lancet*, September 25th, 1909.

SANITARY AND METEOROLOGICAL NOTES.

Vital Statistics.

For four weeks ending Saturday, October 9, 1909.

IRELAND.

The average annual death-rate represented by the deaths—exclusive of deaths of persons admitted into public institutions from without the respective districts—registered in the week ended October 9, 1909, in the Dublin Registration Area and the twenty-one principal provincial Urban Districts of Ireland was 15.1 per 1,000 of their aggregate population, which for the purposes of these returns is estimated at 1,142,308. The deaths registered in each of the four weeks ended Saturday, October 9, and during the whole of that period in the several districts, alphabetically arranged, correspond to the following annual rates per 1,000. In some cases, owing to deaths not having been registered within the week in which they occurred, the rates do not fairly represent the weekly mortality :—

Towns, &c.	Week ending				Average Rate for 4 weeks	Towns, &c.	Week ending				Av a Ra for wee
	Sept. 18	Sept. 25	Oct. 2	Oct. 9			Sept. 18	Sept. 25	Oct. 2	Oct. 9	
22 Town Districts	15.1	16.9	16.2	15.1	15.8	Lisburn -	18.2	13.6	36.4	18.2	21
Armagh -	—	—	13.7	6.9	5.2	Londonderry	10.9	14.5	20.5	9.7	13
Ballymena	19.2	9.6	23.9	14.4	16.8	Lurgan -	17.7	13.3	44.3	17.7	23
Belfast -	12.5	16.3	13.4	12.8	13.8	Newry -	8.4	8.4	12.6	12.6	10
Clonmel -	15.4	5.1	15.4	5.1	10.3	Newtownards	22.9	5.7	—	22.9	12
Cork -	17.8	19.9	21.2	24.0	20.7	Portadown -	15.5	10.3	5.2	10.3	10
Drogheda -	12.3	12.3	—	32.7	14.3	Queenstown	19.8	19.8	13.2	6.6	14
Dublin - (Reg. Area)	17.3	19.5	17.5	16.8	17.8	Sligo -	4.8	9.6	9.6	—	6
Dundalk -	12.0	19.9	16.0	16.0	16.0	Tralee -	10.6	15.9	26.4	15.9	17
Galway -	—	15.5	27.2	7.8	12.6	Waterford -	21.4	7.8	19.5	3.9	13
Kilkenny -	19.7	29.5	—	19.7	17.2	Wexford -	18.7	28.0	14.0	18.7	19
Limerick -	21.9	13.7	10.9	19.1	16.4						

The deaths (excluding those of persons admitted into public institutions from without the respective districts) from certain epidemic diseases registered in the 22 districts during the week ended Saturday, October 9, 1909, were equal to an annual rate of 1.7 per 1,000, the rates varying from 0.0 in sixteen of the districts to 4.1 in Cork and Limerick respectively. Among the 95 deaths from all causes registered in Belfast are 3 from whooping-cough, 2 from enteric fever, and 11 from diarrhœal diseases. Of the 35 deaths from all causes in Cork 2 are from whooping-cough and 4 from diarrhœal diseases; of the 14 deaths from all causes registered in Limerick there is one death each from whooping-cough, enteric fever and diarrhœa, and one of the 2 deaths from all causes registered in Waterford is from whooping-cough.

DUBLIN REGISTRATION AREA.

The Dublin Registration Area consists of the City of Dublin as extended by the Dublin Corporation Act, 1900, together with the Urban Districts of Rathmines, Pembroke, Blackrock, and Kingstown. The population of this area is 398,356, that of the City being 306,902, Rathmines 36,567, Pembroke 28,506, Blackrock 8,759, and Kingstown 17,622.

In the Dublin Registration Area the births registered during the week ended Saturday, October 9, 1909, amounted to 193—106 boys and 87 girls; and the deaths to 134—69 males and 65 females.

DEATHS.

The deaths registered represent an annual rate of mortality of 17.5 in every 1,000 of the population. Omitting the deaths (numbering 6) of persons admitted into public institutions from localities outside the Area, the rate was 16.8 per 1,000. During the forty weeks ending with Saturday, October 9, the death-rate averaged 22.3, and was 2.3 below the mean rate for the corresponding portions of the ten years 1899–1908.

The total deaths (134 in number) included one death from measles, one death from diphtheria, 3 from whooping-cough, 5 from diarrhœal diseases, and one death from cerebro-spinal fever. In each of the three preceding weeks, deaths from measles had been one, 0, and 0; deaths from whooping-cough had been 2, 0, and 2; deaths from cerebro-spinal fever had been 0, one, and 0; deaths from diarrhœal diseases had been 6, 6, and 5; and deaths from diphtheria had been one, 2, and one.

The 11 deaths from pneumonia (all forms) include one death from lobar pneumonia and 3 from broncho-pneumonia, and there were 7 deaths from *pneumonia* (not defined).

The deaths (22) from all forms of tuberculous disease include 17 from tubercular phthisis (*phthisis*), 3 from tubercular meningitis, and 2 deaths from other forms of the disease. Deaths from all forms of tuberculous disease in the three preceding weeks had been 30, 30, and 22 respectively.

There were 4 deaths from carcinoma and 4 from cancer (undefined).

Premature birth was the registered cause of death of 4 infants.

Of 12 deaths attributed to diseases of the brain and nervous system, 2 were those of infants under one year of age from *convulsions*.

Diseases of the heart and blood-vessels caused 15 deaths, and bronchitis caused 8 deaths.

Five deaths were assigned to accidental causes; of these one was by poisoning, one was by drowning, and one occurred from failure of respiration during an operation for goitre.

In one instance the cause of death was "uncertified," there having been no medical attendant during the last illness. This case was that of an infant under one year of age.

Thirty-five of the persons whose deaths were registered during the week were under 5 years of age (26 being infants under one year, of whom 14 were under one month old) and 36 were aged 60 years and upwards, including 19 persons aged 70 and upwards, of whom 2 were octogenarians, and one (a female) was stated to have been aged 95 years.

The Registrar-General points out that the names of the cause of death printed above in italics should be avoided whenever possible in Medical Certificates of the Cause of Death.

STATE OF INFECTIOUS DISEASE IN THE DUBLIN REGISTRATION AREA AND IN BELFAST.

The usual returns of the number of cases of infectious diseases notified under the "Infectious Diseases (Notification) Act, 1889," and the "Tuberculosis Prevention (Ireland) Act, 1908," as set forth in the following table, have been furnished by Sir Charles A. Cameron, C.B., M.D., Medical Superintendent Officer of Health for the City of Dublin; Mr. Fawcett, Executive Sanitary Officer for Rathmines and Rathgar Urban District; Mr. Manly, Execu-

tive Sanitary Officer for Pembroke Urban District; Mr. Heron. Executive Sanitary Officer for Blackrock Urban District; Dr. R. A. O'Donovan, Medical Superintendent Officer of Health for Kingstown Urban District; and Dr. Bailie, Medical Superintendent Officer of Health for the City of Belfast.

TABLE SHOWING THE NUMBER OF CASES OF INFECTIOUS DISEASES notified in the Dublin Registration Area (viz.—the City of Dublin and the Urban Districts of Rathmines and Rathgar, Pembroke, Blackrock, and Kingstown), and in the City of Belfast, during the week ended October 9, 1909, and during each of the preceding three weeks. An asterisk (*) denotes that the disease in question is not notifiable in the District.

CITIES AND URBAN DISTRICTS	Week ending	Small-pox	Measles	Rubella, or Epidemic Rose Rash	Scarlet Fever	Typhus	Relapsing Fever	Diphtheria	Membranous Croup	Pyrexia (origin uncertain)	Enteric or Typhoid Fever	Erysipelas	Puerperal Fever	Whooping-cough	Cerebro Spinal Fever	Tubercular Phthisis (*Phthisis*).	Total
City of Dublin	Sept. 18	–	*	*	7	–	–	3	–	–	8	12	–	*	–	*	30
	Sept. 25	–	*	*	6	2	–	5	–	1	9	8	–	*	–	9	31
	Oct. 2		*	*	16		–	12	–	–	8	14	–	*	–	52a	102
	Oct. 9	–	*	*	6	1	–	5	–	1	9	9	–	*	–	31	62
Rathmines and Rathgar Urban District	Sept. 18	–	*	*	1	–	–	–	–	–	–	2	–	*	*	*	3
	Sept. 25	–	*	*	1	–	–	–	–	–	–	–	–	*	*	*	1
	Oct. 2	–	*	*	2	–	–	–	–	–	–	–	–	*	*	*	2
	Oct. 9	–	*	*	3	–	–	–	–	–	1	–	–	*	*	*	4
Pembroke Urban District	Sept. 18	–	1	–	2	–	–	3	–	–	[illegible]	–		–	1	*	9
	Sept. 25		–	–	4	–	–	–	–	–	–	–	–	–	–	*	7
	Oct. 2	–	–	–	8	–	–	1	–	–	1	–	–	1	–	*	11
	Oct. 9	–	–	–	3	–	–	–	–	–	–	–	–	–	–	*	3
Blackrock Urban District	Sept. 18	–	*	*	–	–	–	–	–	–	1	–	–	*	–	*	1
	Sept. 25	–	*	*	–	–	–	–	–	–	–	–	–	*	–	*	–
	Oct. 2	–	*	*	–	–	–	–	–	–	–	–	–	*	–	*	–
	Oct. 9	–	*	*	–	–	–	–	–	–	–	–	–	*	–	*	–
Kingstown Urban District	Sept. 18	–	*	*	–	–	–	1	–	–	–	1	–	*	*	*	2
	Sept. 25	–	*	*	–	–	–	–	–	–	1	–	–	*	*	*	1
	Oct. 2	–	*	*	–	–	–	–	–	–	1	–	–	*	*	*	1
	Oct. 9	–	*	*	–	–	–	–	–	–	–	–	–	*	*	*	–
City of Belfast	Sept. 18	–	*	*	5	–	–	2	–	–	4	2	–	*	–	*	13
	Sept. 25	–	*	*	9	–	–	1	1	–	7	9	1	*	–	*	31
	Oct. 2	–	*	*	1	–	–	–	–	2	1	6	1	*	–	*	17
	Oct. 9	–	*	*	8	–	–	3	–	–	3	2	–	*	–	*	16

a From 1st October, 1909.

CASES OF INFECTIOUS DISEASES UNDER TREATMENT IN DUBLIN HOSPITALS.

During the week ended October 9, 1909, one case of measles was discharged from hospital, and 4 cases remained under treatment at its close.

Twelve cases of scarlet fever were admitted to hospital, 6 were

discharged, and 83 cases remained under treatment at the close of the week. This number is exclusive of 12 convalescents from the disease under treatment in Beneavin, Glasnevin, the Convalescent Home of Cork Street Fever Hospital.

Three cases of typhus were admitted to hospital during the week, and 7 cases remained under treatment in hospital at the end of the week.

Seven cases of diphtheria were admitted to hospital, 7 were discharged, there was one death, and 35 patients remained under treatment at the close of the week.

Six cases of enteric fever were admitted to hospital, 6 were discharged, and 55 cases remained under treatment in hospital at the close of the week.

In addition to the above-named diseases, 12 cases of pneumonia were admitted to hospital, 8 were discharged, there were 2 deaths, and 19 cases remained under treatment at the end of the week.

ENGLAND AND SCOTLAND.

The mortality in the week ended Saturday, October 9, in 76 large English towns, including London (in which the rate was 12.2), was equal to an average annual death-rate of 12.9 per 1,000 persons living. The average rate for 8 principal towns of Scotland was 12.0 per 1,000, the rate for Glasgow being 12.7 and for Edinburgh 11.2.

INFECTIOUS DISEASE IN EDINBURGH.

The Registrar-General has been favoured by A. Maxwell Williamson, M.D., B.Sc., Medical Officer of Health for Edinburgh, with a copy of his Return of Infectious Diseases notified during the week ended October 9. From this report it appears that of a total of 91 cases notified, 57 were of scarlet fever, 11 of phthisis, 15 of diphtheria, 5 of erysipelas, one of enteric fever, one of cerebro-spinal fever, and one of puerperal fever.

Among the 435 cases of infectious diseases in hospital at the close of the week were 255 cases of scarlet fever, 55 of measles, 36 of phthisis, 14 of whooping-cough, 48 of diphtheria, 8 of enteric fever, 10 of erysipelas, 3 of cerebro-spinal fever, and one of puerperal fever.

Meteorology.

Abstract of Observations made in the City of Dublin, Lat. 53° 20′ N., Long. 6° 15′ W., for the Month of September, 1909.

Mean Height of Barometer, - - -	30.061 inches.
Maximal Height of Barometer (14th, at 9 a.m.),	30.383 ,,
Minimal Height of Barometer (6th, at 9 p.m.),	29.651 ,,
Mean Dry-bulb Temperature, - - -	53.0°.
Mean Wet-bulb Temperature, - - -	51.5°.
Mean Dew-point Temperature, - -	49.9°.
Mean Elastic Force (Tension) of Aqueous Vapour	.363 inch.
Mean Humidity, - - - -	89.5 per cent.
Highest Temperature in Shade (on 19th). -	64.5°.
Lowest Temperature in Shade (on 9th), -	40.7°.
Lowest Temperature on Grass (Radiation) (14th),	35.9°.
Mean Amount of Cloud, - - -	62.2 per cent.
Rainfall (on 15 days), - - - -	1.816 inches.
Greatest Daily Rainfall (on 27th). - -	.638 inch.
General Directions of Wind, - - -	W., N., N.W.

Remarks.

September, 1909, proved to be a quiet, cool month. At the beginning the rainfall was frequent, but not heavy. A very dry period set in on the 12th, lasting with one or two slight interruptions to the 27th, when a shallow atmospheric depression brought great gloom and heavy downpours of rain to most parts of the United Kingdom. As in past months the general trend of the various low pressure systems—none of which were very deep—was from N.W. to S.E., and this caused broken weather in England, particularly over the south eastern counties, whereas conditions were favourable in the South of Ireland, over which district September was the fourth dry month in succession. At the beginning a large and deep depression lying over Scandinavia caused a cold N.W. wind to pass over Great Britain and Ireland, so that during the night of the 1st–2nd the screened thermometer fell to 35° at Nairn, 36° at Donaghadee, 37° at Nottingham, 38° at Spurn Head, and 39° at Dungeness and Oxford. Another noticeable feature of the month was a violent thunderstorm which visited the upper Thames Valley on the 17th—at Oxford the rainfall was 1.02 inches in about an hour, more than .75 inch being measured in fifteen minutes. At Wisley, Surrey, the rain

and melted hail yielded 1.41 inches in the gauge. On Saturday, the 25th, a magnetic storm of exceptional intensity swept over the greater part of the Earth—aurora australis was reported from South Africa and Australia ; aurora borealis from Russia, Sweden, the west of Scotland, the Isle of Man, and Anglesea. Elsewhere the display was obscured by clouds.

In Dublin the arithmetical mean temperature (53.8°) was 2.1° below the average (55.9°) ; the mean dry-bulb readings at 9 a.m. and 9 p.m. were 53.0°. In the forty-five years ending with 1909, September was coldest in 1886 and 1892 (M. T. = 53.0°), and warmest in 1865 (M. T. = 61.4°) and 1898 (M. T. = 60.2°). In 1908 the M. T. was 56.0°.

The mean height of the barometer was 30.061 inches, or 0.151 inch above the corrected average value for September—namely, 29.910 inches. The mercury rose to 30.383 inches at 9 a.m. of the 14th, having fallen to 29.651 inches at 9 p.m. of the 6th. The observed range of atmospheric pressure was, therefore, 0.732 inch.

The mean temperature deduced from daily readings of the dry-bulb thermometer at 9 a.m. and 9 p.m. was 53.0°, or 6.0° below the value for August, 1909. Using the formula, *Mean Temp.* = *Min.* + (*Max.*—*Min.* × .476), the mean temperature was 53.5°, or 2.2° below the average mean temperature for September, calculated in the same way, in the thirty-five years. 1871-1905, inclusive (55.7°). The arithmetical mean of the maximal and minimal readings was 53.8°, compared with a thirty-five years' average of 55.9°. On the 19th the thermometer in the screen rose to 64.5°—wind, W. ; on the 9th the temperature fell to 40.7°—wind, W.S.W. The minimum on the grass was 35.9° on the 14th.

The rainfall was 1.816 inches on 15 days. The average rainfall for September in the thirty-five years, 1871–1905, inclusive, was 2.210 inches, and the average number of rainy days was 15. In 1871 the rainfall was very large—4.048 inches on, however, only 13 days ; in 1896 no less than 5.073 inches fell on 23 days, establishing a record rainfall for September. On the other hand, in 1865, only .056 inch was measured on but 3 days. In 1908 2.313 inches fell on 19 days.

High winds were noted on only 3 days, and never attained the force of a gale. Fog was observed on the 17th, 22nd, 23rd, 25th and 26th.

The rainfall in Dublin during the nine months ending September

30th amounted to 18.493 inches on 134 days, compared with 19.557 inches on 154 days in 1908, 17.140 inches on 153 days in 1907, 16.121 inches on 146 days in 1906, 19.266 inches on 145 days in 1905, 19.147 inches on 152 days in 1904, 25.269 inches on 174 days in 1903, 21.425 inches on 149 days in 1902, 18.070 inches on 124 days in 1901, only 10.968 inches on 112 days in 1887, and a thirty-five years' average of 20.160 inches on 146 days.

At the Normal Climatological Station in Trinity College, Dublin, the observer, Mr. William J. Good, reports that the mean height of the barometer was 30.065 inches. The range of atmospheric pressure was between 30.397 inches at 9 p.m. of the 14th and 29.660 inches at 9 p.m. of the 6th. The mean value of the readings of the dry-bulb thermometer at 9 a.m. and 9 p.m. was 53.9°. The arithmetical mean of the daily maximal and minimal temperatures was 54.0°. The screened thermometers rose to 67.0° on the 19th, having fallen to 40.0° on the 18th. On the 14th the grass minimum was 32.8°. Rain fell on 14 days to the amount of 1.840 inches, the greatest fall in 24 hours being .720 inch on the 27th. The duration of bright sunshine, according to the Campbell-Stokes recorder, was 97.1 hours, of which 9.0 hours occurred on the 10th. The mean earth temperatures were—at 1 ft., 55.5°; at 4 ft., 55.9°. The one-foot thermometer ranged from 58.0° on the 4th and 6th to 54.0° on several days. The four-feet thermometer ranged from 57.8° on the 1st to 55.0° on several days at the close of the month.

Mr. Robert O'Brien Furlong, C.B., reports that the rainfall at Cloneevin, Killiney, Co. Dublin, was 1.48 inches on 14 days, the maximum being .60 inch on the 27th. The average September rainfall at this station in 24 years (1885-1908) was 1.961 inches on 12.9 days. Up to the 30th, from January 1st, 1909, 16.7 inches of rain had fallen on 123 days.

Mr. R. Cathcart Dobbs, J.P., reports that at Knockdolian, Greystones, Co. Wicklow, the rainfall was 1.530 inches on 14 days, compared with 3.600 inches on 21 days in 1908, .900 inch on 7 days in 1907, .338 inch on 6 days in 1906, 1.055 inches on 10 days in 1905, 2.880 inches on 12 days in 1904, 3.950 inches on 20 days in 1903, 3.995 inches on 12 days in 1902, and 5.420 inches on 19 days in 1901. The heaviest fall in 24 hours was .660 inch on the 27th. At Knockdolian the rainfall since January 1st, 1909,

has been 20.196 inches on 109 days, compared with 21.710 inches on 115 days in 1908, 19.465 inches on 129 days in 1907, 15.793 inches on 105 days in 1906, 22.113 inches on 120 days in 1905, 21.457 inches on 141 days in 1904, 27.050 inches on 154 days in 1903, 27.156 inches on 123 days in 1902, and 25.105 inches on 119 days in 1901.

At Clonsilla, Greystones, Mr. A. Victor Price recorded a rainfall of 1.29 inches on 14 days. The greatest rainfall in 24 hours was .60 inch on the 27th. Temperature was highest (67°) on the 18th, 19th and 23rd, lowest (40°) on the 8th. The mean temperature was 54.3°.

Dr. Launcelot T. Burra reports that at the Royal National Hospital for Consumption, Newcastle, Co. Wicklow, the rainfall was 1.45 inches on 17 days. The maximal daily fall was 0.57 inch, which was recorded on the 27th. The thermometers in the shade rose to 73.0° on the 20th and 21st, and fell to 40.0° on the 16th. The mean temperature of the month was 55.7°.

Dr. Arthur S. Goff returns the rainfall at Lynton, Dundrum, Co. Dublin, at 2.07 inches on 15 days, compared with 5.03 inches on 18 days in 1901, 4.09 inches on 19 days in 1902, 4.33 inches on 21 days in 1903, 2.94 inches on 19 days in 1904, 1.07 inches on 15 days in 1905, .62 inch on 8 days in 1906, .67 inch on 8 days in 1907, and 2.90 inches on 8 days in 1908. The greatest daily fall was .59 inch on the 27th. The mean temperature in the shade was 54.2°, compared with 55.3° in 1903, 56.2° in 1904, 54.9° in 1905, 57.6° in 1906, 58.2° in 1907, and 56.6° in 1908. The screened thermometers rose to 65° on the 19th, and fell to 42° on the 18th. There were hail showers on the 8th.

Mr. T. Bateman reports that the rainfall at The Green, Malahide, Co. Dublin, was 1.386 inches on 15 days, the greatest fall in 24 hours being .516 inch on the 27th. The mean shade temperature was 52.6°, the extremes being—highest, 66.5° on the 19th; lowest, 37.0° on the 8th. In September, 1907, the rainfall was .602 inch, on 7 days; in 1908 it was 2.983 inches on 19 days. Up to September 30 the rainfall amounted to 17.117 inches.

At 21 Leeson Park, Dublin, Dr. Christopher Joynt, F.R.C.P.I., registered 1.765 inches of rain on 14 days, the greatest fall in 24 hours being .620 inch on the 27th.

The Rev. Arthur Wilson, M.A., returns the rainfall at the Rectory, Dunmanway, Co. Cork, at only .50 inch on, however, 15 days, the heaviest fall in 24 hours being .10 inch on the 30th.

A very fine, bright month, bringing to a close the driest summer on record. The rainfall was chiefly in the form of drizzle. The nights were cold from the 6th to the 16th. Especially warm on the 20th and 25th. Some days were dull and threatening.

Mr. Wm. Miller states that in the City of Cork the rainfall was 1.40 inches on 16 days, or 1.28 inches short of the average for September. The rainfall was greatest on the 30th, when 0.32 inch was measured. In the 9 months ended September 30 the rainfall was 19.97 inches on 121 days, or 6.82 inches and 17 days less than the average.

The rainfall recorded at the Ordnance Survey Office, Phœnix Park, was 1.876 inches on 15 days, the greatest measurement in 24 hours being .725 inch on the 27th. The total amount of sunshine at this station was 111.4 hours, the most registered on any one day being 10.2 hours on the 8th.

THE BRITISH MEDICAL REVIEW.

THE September number of *The British Health Review* is lighter reading than usual. Mrs. Humphry ("Madge" of *Truth*) tells how to get and retain a beautiful complexion. This consists, she says, in absolute cleanliness and plenty of fresh air; bad complexions mean indifferent health. Miss Kate Emil Behnke emphasises the value of fresh air in her article "The Importance of Correct Breathing," and asserts that the gain in health and strength, in immunity to colds, in nerve steadiness and improvement in spirits, will repay a thousandfold. E. Greville Barrington writes breezily on "Exploded Superstitions." F.R.C.S. has a valuable article on "The Problem of the Surgical Patient." "M.D." continues his article on "Headaches, their Cause and Prevention," whilst the Editor deals with "Infant Life and the Education of Women." Recipes and Cookery Hints, Health Notes and Answers to Correspondents complete a very seasonable number. A prize is offered for the best letter on the advantage of a State-paid Medical Profession.

PERISCOPE.

ROYAL COLLEGE OF PHYSICIANS OF IRELAND.

At the Stated Annual Meeting of the Royal College of Physicians of Ireland held on St. Luke's Day, Monday, October 18th, 1909, the following officers were elected for the coming year :—

President—Dr. Andrew J. Horne.

Vice-President—Dr. E. MacDowel Cosgrave.

Censors—Dr. E. MacDowel Cosgrave, Dr. E. Hastings Tweedy, Dr. Coleman, C.M.G., and Sir W. J. Thompson.

Examiners for the Midwifery Licence—Dr. Spencer Shiell and Dr. D. J. O'Connor.

Additional Examiners to take the place of an absent Censor or Examiner—Medical Jurisprudence and Hygiene, Dr. H. T. Bewley ; Medicine, Dr. O'Carroll ; Midwifery, Dr. T. Henry Wilson.

Examiners for the Membership—Clinical, Dr. Bewley and Dr. Coleman, C.M.G. ; Practice of Medicine, Dr. E. E. Lennon and Sir W. J. Thompson ; Pathology, Dr. H. C. Earl and Dr. A. C. O'Sullivan.

Supplemental Examiners under the Conjoint Examination Scheme :—

Biology—Dr. T. P. C. Kirkpatrick.

Chemistry—Professor E. Lapper and Dr. Ninian Falkiner.

Physics—Dr. W. A. Winter and Dr. E. J. Watson.

Pharmacy, Materia Medica, and Therapeutics—Drs. Travers Smith and Dr. M. Dempsey.

Physiology—Dr. H. C. Earl.

Pathology—Dr. F. C. Purser.

Medicine—Dr. G. J. Peacocke and Dr. J. A. Matson.

Hygiene and Forensic Medicine—Dr. A. Nixon Montgomery.

Examiners for the Conjoint Diploma in Public Health—Chemistry, Professor E. Lapper ; Hygiene, Dr. W. R. Dawson ; Meteorology, Dr. W. G. Harvey.

Extern Examiners for the Conjoint Preliminary Examination—Languages, Mr. E. H. Alton, F.T.C.D. ; Science, Mr. R. A. P. Rogers ; Irish, Dr. Maguire.

Representative of the College on the General Medical Council—Sir John Moore.

Representatives of the College on the Committee of Management—Dr. Walter G. Smith, Sir John Moore, and Dr. Craig.

Treasurer—Dr. H. T. Bewley.

Registrar—Dr. James Craig.

Librarian—Mr. R. G. J. Phelps.

Architect—Mr. A. E. Murray.

Law Agents—Messrs. S. Gordon & Son.

Land Agents—Messrs. Townshend.

Dr. Walter G. Smith, F.R.C.P.I., was elected King's Professor of Materia Medica and Pharmacy in the School of Physic in Ireland, and Dr. Henry Jellett, F.R.C.P.I., was elected King's Professor of Midwifery in the same School.

TREATMENT OF COXALGIA AND WHITE-SWELLING.

In a communication to the Twenty-second French Congress of Surgery, Paris, 1909, at the Session of Tuesday, October 5, Dr. Louis Mencière, Surgeon to the Hospital of Orthopædic Surgery of Reims, explained his technique of the treatment of coxalgia and of white-swellings with a view to the preservation of free movement. He showed a cinematographic study of the powers of movement in cases after recovery. He displayed, text in hand, some of his publications, which were antecedent to those of authors who claim the priority of the method. He caused his colleagues at the Congress to examine in detail a female patient, completely cured with perfect powers of movement, in 1902, at a time when no result of this kind had been published, secure in his being the first memoir on the subject. *Intra- and extra-articular injections in fractional doses* formed for over ten years the basis of his practice in the treatment of tuberculous cases *in the early stages*. These injections are made in soft parts, and in those cases where the bones themselves are already affected, the Reims surgeon uses, in addition, *pheno-puncture*, invented by himself in 1901. By this method, customary with Dr. Mencière, tuberculous patients of the first degree are invariably cured with free movement, and without lameness; those who have reached the second stage are frequently perfectly cured, while as to those in the third stage one must be content to treat their form of the disease by the injections or by phenolisation, and by placing the limb in a favourable position. In exceptional cases, however, free move-

ment has even then been restored. A series of cinematographic films shown on the screen allow one to judge of the attitude of the patient and of the extent of the power of movement either preserved or recovered. The interest of this series is all the greater because the author shows cases cured since 1902–1903, and which he has but recently cinematographed—several years after they have been cured. One may thus judge of the permanence of the recovery. Finally, the orthopædic treatment of coxalgia and of white-swellings includes, in addition to injections, which modify the morbid condition, the wearing of rigid dressings, then by degrees articulated dressings, and, lastly, methodical movement, carefully executed by the application of apparatus, massage applied with judgment according to the subject, the degree of the injury, and the articulations where the seat of the mischief lies.

ROYAL COLLEGE OF SURGEONS OF EDINBURGH.

At a meeting of the College held on October 19th the following gentlemen were elected Fellows :—Alexander Allan, L.R.C.S.E., Glenalmond ; Robert Brodie Anderson, M.D., L.R.C.S.E., Winnipeg ; Walter Ernest Barrett, L.R.C.S.E., Colwyn Bay ; Oliver Carlyle, L.R.C.S.E., Edinburgh ; Alexander Ernest Chisholm, M.B., Ch.B., Edinburgh ; Ramsay Lamy Daly, M.D., Johannesburg ; Ezra Newton Drier, M.D., Vancouver ; Charles Gordon Edmonston, M.B., Ch.B., Portobello ; Mark Stewart Fraser, M.B., Ch.B., D.P.H., Edinburgh ; John Daniel Harmer, M.B., Ch.B., Exeter ; Robert Hillhouse Jamieson, M.B., Ch.B., Edinburgh ; James Kirkwood, M.B., Ch.B., Captain, I.M.S. ; John M'Culloch, M.D., Ontario ; Alexander Church Brodie M'Murtrie, M.B., Ch.B., D.P.H., Edinburgh ; Herbert Michael Moran, M.B., C.M., Sydney ; John Murdoch, M.B., Ch.B., Shettleston ; Frank Porter Patterson, M.D. Quebec ; Francis Edward Price, M.R.C.S. Eng., Ipswich ; Vivian Heathcote Roberts, L.R.C.S.E., Captain, I.M.S. ; William Tarr, M.B., Ch.B., Captain, I.M.S. ; Robert Telford, M.D., Vancouver ; James Alexander Thwaits, M.B., C.M., Johannesburg ; and Frederick Herbert Wallace, M.R.C.S. Eng., London, N.E. At the same meeting the Victoria Jubilee Liston Prize of £100 for the greatest benefit done to Practical Surgery by a Fellow or Licentiate of this College, during the quadrennial period from 1905, instituted by His Excellency the late Dr. Robert Halliday Gunning, was awarded to Mr. Robert Jones, F.R.C.S.E., 11 Nelson Street, Liverpool.

NEW PREPARATIONS AND SCIENTIFIC INVENTIONS.

Diamalt.

In the course of their business as manufacturers of malt for brewers, the British Diamalt Company, whose maltings and extract of malt works are situated at Sawbridgeworth, Herts, have long been in the habit of making extract of malt for technical purposes. The ready sale for their preparation was in itself an evidence of its richness in diastatic power. The Firm recently determined to prepare a malt extract for medicinal use, and to this they have given the registered name of "Diamalt." At the beginning of the present year, Mr. E. F. Harrison, B.Sc. (Lond.), Ph.C., F.I.C., F.C.S., made a thorough analysis of the preparation, and the following is an extract from his report:—"In judging the value of a malt extract the principal points to be taken into consideration are its purity and its diastatic power; further considerations of importance are the proportions of proteids and of soluble carbohydrates which it contains, and the possession of an agreeable flavour. The usefulness of the extract as an aid to digestion depends on its diastatic power, and its direct value as a food depends to a large extent on the proportion of proteids present. I find the 'Diamalt' to be *a pure extract of malt of the highest quality*, careful search did not reveal the presence of any foreign ingredient. In determining the diastatic power I followed (with a little modification, necessitated by the high diastatic power of the extract) the method given in the British Pharmaceutical Codex, and described rather more fully by myself in a paper published in 1906. Expressed in the units defined in that paper, the diastatic power of 'Diamalt' was 1,392—that is, under the conditions of the test, *it completely digested practically fourteen times its own weight of starch in half an hour. This is a much higher digestive power than was shown by any other malt extract;* the next best (an article sold under a proprietary brand at a somewhat high price) showed a diastatic power of 920, and the next one to that a power of 601. The proportion of proteids which I found in the 'Diamalt' was 5.8 per cent., a figure which was only slightly surpassed by one extract and equalled by one, the others showing various amounts down to 4.0 per cent. Practically the whole of the remainder of the solids of the 'Diamalt' consisted

of soluble carbohydrates. It possesses an excellent flavour and is highly palatable. These results show the 'Diamalt' to be a thoroughly satisfactory preparation, of the highest degree of excellence." We understand that the Diamalt Works are under the technical direction of Dr. Hamburg, previously and for many years attached to the Hygienic Institute of the University of Vienna. The Firm employ only the finest selected barley, and malt it under the best modern scientific conditions. Quite recently a combination of cod liver oil and diamalt has been put on the market in two strengths—15 per cent. of oil by weight, or 20.3 per cent. by measure, and 33⅓ per cent. of oil by weight, or 41.7 per cent. by measure. These preparations cannot fail to be of great use.

Brusson Jeune Diabetic Bread.

Samples of this very palatable and doubtless effective preparation have been submitted to us by Mr. Richard Maurice, 17 Bedford Chambers, Covent Garden, London, W.C. This bread does not belong to the category of pure gluten breads—a fact which partly accounts for its palatable nature. It is also perfectly assimilable, so that diabetics thrive on it, better results being obtained from the use of the Brusson Jeune bread than from most, if not all, other diabetic foods in the market. The Établissements Brusson Jeune are situated at Villemur, France, but the preparation may be obtained at the London office in Covent Garden.

ERRATUM.

In the October number of the Journal, page 261, line 6 from the bottom, the word "vivisection" is an obvious printer's error for "venesection."—Ed.

THE DUBLIN JOURNAL

OF

MEDICAL SCIENCE.

DECEMBER 1, 1909.

PART I.

ORIGINAL COMMUNICATIONS.

ART. XV.—*On some relations of Physic to Physics, and their bearing upon Therapeutics.*[a] By WALTER G. SMITH, M.D.; Ex-President, Royal College of Physicians of Ireland.

IN the desultory remarks which I offer to you on this occasion I will assume that the term physics includes chemistry. For it is evident that physics, no longer content with the molecule, has now annexed the sacred atom of the chemist.

The atomic theory has scarcely passed its centenary, and yet we have already become familiar with phenomena which prove that the immutable and indivisible atom of the 19th century has lost these attributes. Chemistry, while its ordinary practical course is untouched by the new revelations, has come to recognise that the atom is a microcosm in structure, and conceals an amazing storehouse of energy, electrical in its nature.

In the early dawn of medicine, theology and therapeutics—the former spelt with a big T—were closely interwoven. By degrees the ill-assorted alliance has been severed, and, in later days, all earnest cultivators of medical science have done

[a] Presidential Address to the Section of Medicine in the Royal Academy of Medicine in Ireland, delivered on Friday, October 29, 1909.

their best to emancipate it from the thrall of superstition and of mere dogmatic authority.

This is the true Renaissance of Medicine, and the spirit of free inquiry, or moderate doubt, is the distinctive feature of modern thought. We can the more truly reverence the great Fathers of Medicine, Hippocrates and Galen, although we do not bow down and worship them as was done for many centuries. In our own times we witness the rash endeavours of certain clerics, in America and elsewhere, to re-engage in practical therapeutics, and, with the self-assurance born of ignorance and conceit, they intrude where they ought not, and meddle where they can do nought but mischief. As Osler ("The Treatment of Disease," *Brit. Med. Journ.*, July 24, 1909) aptly quotes from Fuller:—"Circe and Æsculapius were brother and sister, and the wiles of the one are very apt to entrap the wisdom of the other."

Homœopathy had for a time a sickly existence, and has nearly perished of inanition. But its vacant throne is, in part, occupied by that audacious fraud and moral influenza, yclept Christian Science, a pursuit the "christianity" of which is as bizarre as its "science" is contemptible. A woman lately died at Worthing who had been suffering from consumption for five years. At the inquest it was stated that she had been in the hands of the Christian Scientists, who charged her a reduced fee of five shillings weekly for praying twice daily. The regular fee was £1 1s. (*Irish Times*, Sept. 14, 1909.) To Christian Science may be fitly applied a "bull" once perpetrated in the House of Commons—"It is a lie, sir, and it is high time we nailed this lie to the mast."

It might be supposed that, with the advance and spread of scientific knowledge, quackery and superstition would die out. Yet the experience of the ages teaches that man has an ineradicable hankering after the unknown and the unknowable, and is ever ready to pin his blind faith to the incredible and the marvellous.

Man is, by nature, an idolater, and he revels in that greatest of all human capacities—the capacity for self-deception (Osler).

While we gladly allow that chemistry has made magnificent contributions to our stock of remedies, the very facility with which organic syntheses can be effected has its disadvantages.

Of the innumerable new remedies which are daily showered upon us, most of them are like falling stars which flash across our path for a moment, and leave behind not even a speck of therapeutic dust. A few, like meteorites, cling to earth and become part of our possessions.

We are ready also to admit our obligations to the pharmaceutical skill of the great drug firms, but they now presume, under an ill-disguised humility, to teach us our business, and, by their commercial wits, they batten upon the witlessness of the public—lay and medical.

They invade us in our consulting hours at home, and bombard us with their pseudo-scientific missiles—heralded by a flourish of fearful chemical formulæ, and so degrade the progress of real therapeutics to a vulgar commercial competition.

"Where is boasting, then? It is excluded."

Let us turn now to other thoughts.

An analogy may be traced between the parallel courses of modern physiology and modern chemistry.

For a time the investigations of physiologists ran largely on systems and tissues: those of chemists on systems, groups, and types. During recent years the tendency in each is to return to the closer study of their respective units. That is to say, the cell for physiology, the atom for chemistry and physics. In each case the unit turns out to be a highly complex structure, with infinite potentialities, and the atomic hypothesis plays the leading part in the science of to-day.

The two great laws which serve as beacon lights in the investigation of natural phenomena are the generalisations known as the laws of thermodynamics—

(*a*) The principle of conservation of energy—the first law.

(*b*) The doctrine of the transformations, or degradation of energy—the second law of thermodynamics.

These two principles are obeyed throughout the whole range of organised nature, and, as Benjamin Moore shows so clearly

in his interesting and suggestive articles in "Recent Advances in Physiology and Biochemistry," the living cell is an energy machine or transformer.

To comprehend and follow these exchanges of energy is largely, for biologists, the task of the new branch of study termed physical chemistry, which may be regarded as the product of the cross-fertilisation of physics and chemistry.

So far as we can ever hope to penetrate the mystery of life, it is surely only by the aid of such inquiries and experiments. This was dimly perceived and felt by the older seekers after truth, as is seen in the gropings of iatro-mechanics and iatro-chemistry in the 17th and 18th centuries.

Methods of physico-chemical therapeutics—*e.g.* massage and hydrotherapeutics—reach back to antiquity, and one of the earliest recorded examples of hydrotherapeutics is related in the story of the cleansing of Naaman's "leprosy."

In my address to this Section last year upon Baths and Mineral Waters, I attempted a brief and inadequate sketch of the physico-chemical principles which lie at the foundation of scientific balneology. If we were to take seriously the claims of the proprietors of the different mineral waters, they would have us to believe that each spring is a veritable pool of Bethesda. But the pool needs to be stirred with the rod of science.

In Starling's recent book on "The Fluids of the Body," we have an exposition by a master-hand of the physico-chemical factors which appear to govern the intake, the output, the distribution, and the exchanges of the body liquids. Chemical changes are at the root of all life, and if we seek for a criterion of animate substance we find that metabolism is *the* distinction between living and lifeless substance.

The possession of the highly complex protein molecule is a definite mark of distinction of the living organism as contrasted with all inorganic bodies (Verworn, *Allgem. Physiologie*, 1909).

Chemical energy is the source of all other forms of energy in the organisation. By its transformations are derived mechanical energy, light, heat, and electricity.

In chemistry, as pointed out by H. E. Armstrong, everything tends to show that function and structure are most closely connected—odour, taste, colour, physiological effect, are specific rather than general properties, each conditioned in its special variety by some special structure (Presidential Address to Section B., Chemistry, at the British Association meeting in Winnipeg, 1909).

The influences of changes of temperature upon the phenomena of life are obviously of high significance, and they have a practical interest for physicians in connection with the pathology of pyrexial affections.

We have learned that the range of temperature compatible with preservation of life is far greater than was formerly thought. The very surprising fact has been established that the living substance of the cells of animals so high in the scale as fishes and frogs can be frozen into ice without losing its capacity for restoration to vital activity.

As for bacteria, Macfadyen has shown that a temperature of 252° C.—*i.e.*, only 21° above absolute zero—failed to destroy the life of certain bacteria even after ten hours' duration of the experiment. Conversely, he has also shown that there are "thermophilous" bacteria, whose *optimum* lies between 50° to 65° C.; and some cultures will grow at a temperature of 72° C. (161.6° F.).

The equilibrium point of a metabolic process can be shifted by alterations of temperature. Take, for example, the potato.

The conversion of starch into sugar is an exo-thermic reaction—*i.e.*, is attended with extrication of heat. Therefore, in accordance with van t'Hoff's principle of mobile equilibrium, a rise in temperature will favour the reverse, or endo-thermic process—*i.e.*, the regeneration of starch. Below 5° C. sugar is formed in a potato from starch: if the temperature rises, starch will be re-formed from sugar. Similarly, evergreen leaves are, in winter, often free from starch, but contain grape sugar. If brought into a warm room, the sugar vanishes and starch takes its place (Höber, *Physikal. Chem. der Zelle und der Gewebe*, 1902).

So we see that cell physiology is the very root and basis

of all physiology, just as atoms are the foundation stones of chemistry.

Calorimetry, coupled with metabolic investigations, leads to the deduction that the energy expended by the body can be *quantitatively* accounted for by the stores of potential energy contained in the food.

Where, then, is there room for that mysterious *vital force*, or *vital energy*, or *biotic energy* (B. Moore), which, like Melchisedek, has neither father nor mother, and which has so long dominated and enfeebled physiological thought. How do we gain by using a hazy conception expressed in an indefinable word ?

The doctrine of the " vital force " is really only a mythological way of expressing the amazement which the unique character of organic phenomena excited (Höffding, *Outlines of Psychology*, 1908).

When we say that physiology is and never can be aught else than the physics and chemistry of the living organism, this is not to assert that the forms of energy in living matter are *identical* with the forms of energy exhibited in non-living structures And, undoubtedly, there are important phenomena, especially in connection with the nervous system, which lie outside the sphere of experimental inquiry, and belong to pure psychology.

The mystery of life is, probably, an insoluble problem in its ultimate reduction, and, for my own part, I am quite willing to accept Du Bois Reymond's celebrated dictum—*Ignoramus et ignorabimus.*

The fluid nature of living substance is its most important physical property. Hence, the deep significance of the study of colloids, of osmotic phenomena, ionic dissociation, and the varying and complex functions of membranes and of surfaces of separation between the cells of the plant or animal.

From a purely physical point of view living substances may almost be regarded as *animated water* (H. E. Armstrong). Or, we may say with Loeb, that all life phenomena are ultimately due to motions or changes occurring in colloidal substances, for nature works with simple tools.

Another illustration of physico-chemical processes is afforded by catalytic, or ferment, phenomena, which play a dominant part in our physiology, and it is no exaggeration to say that the wheels of life are lubricated by the oil of catalysis. In Dr. Bayliss's recent monograph on "The Nature of Enzyme Action" we have an excellent and lucid exposition of the fundamental problems connected with enzyme action.

In the highest sphere of inquiry—viz., that of mental processes—medical men are not much attracted by the barren speculations of scholastic psychology. Long ago that monumental genius, Johannes Müller, tersely expressed this feeling in the phrase—*Psychologus nemo nisi physiologus.*

The strange and weird phenomena of mental disease, of hypnotism, suggestion, heredity, instinct, and so forth, will, I am convinced, never be elucidated except by the labours of physiological psychologists, who do not shut themselves up in their studies to dream dreams, but avail themselves, as opportunity offers, of the aids which *comparative* anatomy and physiology, coupled with experimental science, alone can afford. In this connection I may refer to the excellent text-book of "Experimental Psychology" by Mr. Charles S. Myers (1909).

Human happiness and well-being have been and will be further advanced by physiologists, and for the furtherance of this laudable end it has been proved up to the hilt that it is absolutely necessary to utilise experiments on animals, humanely conducted, a method too often stigmatised by the injurious and inapt term, vivisection.

Sir Samuel Wilks tells a story of an old lady he heard declaiming against the horrors of vivisection. She went on to say that there was no cruelty or dreadful thing that scientific men would not do to find out how things acted. There was nothing that God had created but what they would destroy to look at its inside; but, "thank God," she ended, "they can't touch the beautiful aurora borealis!" (*Brit. Med. Journ.*, July 31, 1909.)

Already a beginning has been made to create a mechanics of the brain and higher nerve centres, and its future is rich in promise.

For example, let us take the law of mass action, which postulates that the course of a chemical reaction depends not only upon the mode of the chemical affinities, but also on the relative quantities of the interacting bodies. Suppose we stimulate a muscle so that its metabolism is continuously increased—*i.e.*, the dissimilation stage of its metabolism is excited—then, automatically occurs a new formation of living substance—*i.e.*, a secondary excitation of the assimilation phase of its metabolism is produced. Thus the deficit is equilibrated, the metabolic equilibrium is restored, the biotonus once more = 1. The converse will, of course, happen if the assimilation process is augmented by an increased supply of nutriment.

Thanks to this principle we are able to repair the inroads of fatigue, to overcome disease, and to prolong life (Verworn, *loc. cit.*, p. 595).

Once more, the principle of interference of stimuli is one of far-reaching importance in nerve-physiology and nerve-therapeutics, and the phenomena of inhibition can, perhaps, be best interpreted in terms of interference. A familiar example of inhibitory influence is afforded by the facts of snake-charmers, as practised in Egypt and the East from the time of Moses and Aaron until now.

Again, what a vast and fruitful field of inquiry and of practical therapeutics is opened up by investigations upon the effects of auto-intoxications, intestinal and otherwise, upon mental functions.

Have we not gained light and won therapeutic triumphs by a study of the effects on the nervous system of alterations in the internal secretory glands, of the thyroid and parathyroid, of the adrenals, and of the sexual glands.

But inexorable time presses, and I must not tax your patience with more than one other thought.

By far the most striking illustration of the influence of external conditions upon vital processes is afforded by the different forms of radiant energy, considered as stimuli.

Until recently we were acquainted only with the action of luminous and thermal rays as physiological stimuli, and we

Gamut of Ether Waves.

Longer waves, up to 1,000 feet or more, in wireless telegraphy. Hertz waves probably include 16–17 octaves.

have reviewed one or two points in connection with heat rays.

Time forbids to enter upon the fascinating topic of the potent influence of light-rays, considered apart from heat-rays, and it is unnecessary to dwell upon the services rendered by the Finsen light.

Speaking generally, it may be stated that the physiological activity of light-rays is inversely proportional to their wave-length. Hertel has lately made special and suggestive investigations upon this subject. He arrives at the conclusion that in all probability the general action of light-rays upon living substance depends, in the first instance, upon modifications in the oxygen-exchange (Table of Wave Lengths).

Fourteen years ago (1895) a new world was disclosed to our ken by the discovery of Röntgen rays, and this was quickly, and logically, followed by the revelation of Becquerel rays, and of the radio-active bodies—viz., Uranium, Radium, Thorium, &c.

Experimental facts have forced us to widen our conception of a "ray." We have now to recognise two kinds of rays—

(1) Streams of particles, of different mass, and with velocities ranging from 15,000 miles per second up to nearly that of the speed of light—*e.g.*, α and β rays from radium.

(2) Electro-magnetic vibrations of the ether.

No conclusions of any weight can yet be drawn as to the *general* physiological action of Röntgen rays, and I pass over the now familiar applications of them to diagnosis and treatment in medicine and surgery.

Among radio-active bodies, especially radium, the α-rays appear to be the most potent, both chemically and physiologically. From a therapeutical standpoint they can scarcely yet be taken into account, for they are held back by slight obstacles, even by the thinnest mica, glass, or aluminium covering of the tube or vessel which contains the radium salt. The α particles are completely stopped by a sheet of note-paper, while the γ rays from radium can be easily detected after traversing twenty centimeters of lead (Rutherford).

It is, perhaps, possible that we may learn to harness α rays

to our service by employing either polonium, which yields only α-rays, or we may perhaps utilise the positive so-called "canal rays" of a Röntgen tube.

A position of unquestionable utility has been gained by the employment of the more penetrating β and γ-rays, which hang together, and the prospects of radio-therapy are undoubtedly bright. The relative penetrative powers of the α, β, and γ-rays may be approximately represented by 1 : 100 : 10,000.

It is probably true that radium can effect a cure in certain cases where X-rays fail, but it is premature to generalise.

Everyone here has, doubtless, read some of the already huge literature of the subject, and will recall Sir F. Treves' lecture on "Radium" (*Brit. Med. Journ.*, Feb. 6, 1909), and the excellent address lately delivered by Dr. Wickham, of Paris, before the British Medical Association in Belfast.

Wickham's pioneer researches were carried out in the Radium Institute in Paris, of which he is Director. Thanks to the enlightened foresight of the King, and the generous aid of Lord Iveagh and Sir E. Cassel, we shall shortly have a Radium Institute at home, which will, we feel assured, make weighty contributions to the new science, and add invaluable weapons to our therapeutical arsenal.

Art. XVI.—*Diseases of Animals Communicable to Man.*[a] By A. E. Mettam, B.Sc., M.R.C.V.S., M.R.I.A.; Principal of the Royal Veterinary College of Ireland; Professor of Pathology and Bacteriology in the College.

In the first place will you permit me to express to you how highly I appreciate the honour you have done me by asking me to address you on this occasion, and, further, to say that I consider this invitation to be an acknowledgment of what members of my profession have done and are doing for the elucidation of disease in its manifold phases. It is not so long ago that in certain circles the diseases of man and of animals

[a] An Address delivered at the Inaugural Meeting of the Medical and Scientific Society of the Apothecaries' Hall, Dublin, on Thursday, October 28, 1909.

were considered as things apart, as having little or no connection, and that in this as in other matters the true study of man was man. Now, however, since the development of bacteriology and experimental work in the laboratory, both in pathology and bacteriology we think differently, and we recognise that disease in its main features is the same in all animals. Indeed we are now convinced that it could not be otherwise when we remember the anatomy and physiology, the structure and function of organs of animals. If differences are met with, they are most often insignificant, and may be readily enough explained, and satisfactorily explained, by reference to environment, to habit, to those subtle differences we recognise in the composition of the juices and fluids of the body.

Although there are many diseases in common to mankind and animals, there are others which are specific in that they are peculiar to different species—to man alone or to the domestic animals. I need only refer to syphilis in man and to rinderpest in animals. It is not to the latter I am to address myself, but to those diseases which are communicable to man from the lower animals, some of which would, perhaps, be more fitly described as common to man and the lower animals.

In the short time at my disposal I shall only be able to touch very superficially upon many things, but a main point I hope to make is the source and method of infection, the origin and port of entry of the infecting agent.

The diseases which are communicated or are transmitted from the lower animals to man may be enumerated as follows:—Tuberculosis, glanders, rabies, anthrax, foot and mouth disease, various forms of suppuration, vaccinia or cow-pox, doubtfully actinomycosis. I say doubtfully, because we know from experimental evidence that it is extremely difficult by inoculation to infect animals even under the most favourable conditions. Psittacosis—a disease of parrots—has been observed in man, in persons occupied in the rearing and training of parrots; the infection is well recognised in certain parts of France, in Paris especially. In addition to these we may enumerate various forms of ringworm. Sabouraud has shown that in France, at any rate, the suppurative forms of tinea, or

those associated with suppuration, are of animal origin. These diseases are all due to known causes, with the exception of rabies; the infecting agent is in the saliva and central nervous system, but has not been seen, if we except Negri's bodies as the cause. Foot and mouth disease is due to a filterable or ultra-microscopic virus, and so, perhaps, is variola. The ringworms are moulds—trichophytons, microsporons, or favus.

In addition to the diseases already mentioned we have certain due to the presence of animal parasites, which are directly the result of man's carnivorous habits, to the consumption of flesh containing parasites in a stage of their life's cycle. I refer to tapeworm and to trichinosis. The presence of tapeworm in the intestine of man follows ingestion of flesh containing the hydatid—*Cysticercus cellulosæ* or *C. bovis* present in pork or beef, as the case may be. Trichinosis follows ingestion of pork, ham, or bacon containing larval trichinæ or trichinellæ, as they are now named, eaten in a raw or underdone condition. Tapeworm is common, and it is not always easy to determine the source of infection; some tapeworms in the bowel of man may have come *viâ* the dog, but trichinosis in the United Kingdom is rare, due not to a searching examination of imported food, but to thorough cooking. When we consider for a moment the amount of foreign bacon and ham consumed and the total absence of any examination of these commodities, we may be thankful that we like our cooking well done.

Tuberculosis.—The cause of tuberculosis is the bacillus of Koch, which agrees in certain of its properties with other organisms which are generally grouped as acid-fast bacteria. In the opinion of many the tubercle bacillus in man and in animals is the same organism, any difference observable in culture or in activity being merely a variation due to source and habitat. All tubercle bacilli have not the same virulence, nor do they all grow with the same rapidity, nor are they all equally infective, but all evidence goes to show that the different strains have a common stock or origin. It may be possible, but I doubt it, to distinguish a *Typus hominis* and a *Typus bovinus*, but it appears that the more virulent an organ-

ism is the greater the probability that it is from a bovine source. Further, there is no doubt that organisms taken from man can readily infect the ox, and we have clinical data that man is infected by the virus obtained from bovines. Not only have very virulent organisms been isolated from man which are particularly virulent for the ox, but from man also cultures have been obtained which resemble in all particulars those isolated from tuberculous birds. So the avian bacillus is pathogenic to man as it is to the rabbit and to the bovine. It may be taken, I think, without cavil—certainly as practical hygienists we may assume it as a fact—that tuberculosis is a panzootic disease. All the domesticated animals may readily be infected—the sheep and goat not less than the others—though in practice we recognise the fact that sheep and goats rarely in nature are found tuberculous. The reason is that they are not exposed to infection; if they are, they speedily become infected. They do not, therefore, possess any immunity as was at one time believed. Dogs and cats—animals more closely in relationship with man—are commonly affected with tuberculosis, and in many instances there appears little doubt that these animals are infected by their tuberculous owners. Tuberculosis in birds—the common fowl, pheasant, turkey, &c.—is common, and though believed to be of a different type from mammalian tuberculosis, still I am of opinion that the time is not remote when it will be universally recognised that the cause is only a variety of a common stock, that the bacillus has obtained special features due to its development in the tissues of birds. The organism is readily pathogenic to rabbits. I have infected cattle with it, and Rabinowitsch has isolated from birds organisms with all the characters of the human bacillus. On the other hand, from man the avian tubercle bacillus has been isolated. In parrots, tuberculosis of the skin about the head is not uncommon, and infection is believed, in many instances, to be of human origin.

Tuberculosis is most common among cattle—among milch cows particularly—on account of their age and their more or less constant and close cohabitation. It is frequent also in

swine, the results of improper diet—*i.e.*, contaminated diet and too frequent exposure to infection. It is less common in the horse, though not so rare as is generally assumed. In all the domestic animals the great weight of evidence points to infection having taken place through the alimentary tract—that is, by ingestion. We know, from a large series of experiments, that lesions in the lungs may rapidly develop following infection through the bowel, and I am afraid this fact has been often lost sight of when we find the chief lesions in the lungs. The path seems so direct through the air passages that one has little difficulty in convincing oneself of its feasibility, but I think I am correct in saying that the commonest site of early pulmonary tubercle in man is the apex of the lung. If this is so, does the aërial route explain most readily the line of infection? Should it not follow rather the course of the main bronchial tubes towards the lower parts of the main tubes? I will not follow this point further, as I desire to enlarge somewhat upon another phase in this question of infection.

In the lower animals we recognise the lesions in tuberculosis as being either closed or open. By the former we mean that the lesion is not as yet discharging infective material, and though the disease may be progressively invading surrounding tissues, it is not as yet infecting at a distance. By an open lesion we mean a lesion which is discharging infective material—a lesion which not only is capable of producing lesions elsewhere in the body, but of also infecting other animals coming in contact directly or indirectly. In the first case the lesion is harmful only to the animal possessing it; in the second case the animal is a positive danger to all others coming into contact with it. The lesions we recognise as open are those of the udder, of the lungs, of the intestine, of the urinogenital organs. To feed calves on milk taken from a tuberculous udder is to perform an experiment with virulent material which will be successful, and the same applies with equal force if the milk be given to a human being, man or child. An animal suffering with tuberculosis of the lungs, from which it is coughing up tuberculous products,

not only reinfects itself through the intestine, but also passes fæces which are infective. Probably a commoner source of infection than most are aware of is excrement passed by an animal with pulmonary lesions. That the evacuations are infective has been proved by feeding and by inoculation. It is unnecessary to dilate upon the risk of animals being infected by discharges from the urinogenital tract carrying tuberculous lesions. Tuberculosis of the uterus in cows is not at all uncommon, and, as might be expected, tuberculosis of the glans penis has been recognised in bulls. As to congenital tuberculosis, quite a large number of cases have been recorded from calves born of tuberculous cows. The calves have been infected *in utero*, a very different thing from hereditary tuberculosis, which does not exist. Despite the prevalence of tuberculosis among the lower animals, cases of cutaneous tuberculosis—that is, lupus—are extremely rare.

At this time I am unable to discuss more fully infection in tuberculosis, but what we see so commonly in animals, under so many different aspects and conditions which bear out the innumerable experiments performed in laboratories the world over, we are compelled to apply to man unless we would consider him an altogether exceptional being.

Glanders—a disease of equines due to the *Bacillus mallei*.—The lesions are chiefly confined to the lymphatic vessels of the skin and the mucous membrane of the respiratory tract and the lungs. As a result of infection, ulcers—more or less numerous—develop on the Schneiderian mucous membrane, on the mucous membranes of the larynx and trachea. Lesions somewhat resembling small tubercles or abscesses are present in the lungs. There may be a pleurisy. The disease is generally chronic in the horse, and is accompanied by a nasal discharge. This discharge is virulent, and it is to infection by this discharge that we owe the cases of glanders in man. In man the patient is one who is more or less closely brought into contact with horses, and infection may be brought about by direct inoculation of virulent material into a wound, by infective material being blown into the eye or conveyed to the alimentary tract along with the food. Experimentally the

disease can be given to horses by giving cultures in drinking water, or conveyed to the stomach in the interior of a bolus. Animals so infected develop glanders, pulmonary lesions, in about a fortnight. The disease may readily be set up by inoculation of infective material, and a donkey, for instance, so infected may develop acute glanders. So may also the cat, but the dog not infrequently escapes with a mere local ulceration which may eventually heal. The male guinea pig is the usual experimental animal.

Fortunately in Ireland we have not, at the present time, so far as is known, any cases of glanders, but I think if we ever are so unfortunate as to have an outbreak of the disease notice of the fact should be given to the Medical Officer of Health, that he may notify the hospitals. I say this because I know that in man glanders is not diagnosticated unless it is suspected. In most cases the symptoms are acute, with nothing of a definite character save perhaps a pneumonia ; there may be no local evidence of infection, nothing to direct to a positive diagnosis unless the history of the patient leads one to suspect glanders. Even then the agglutination test is the only one to give positive results. A positive diagnosis in the earliest stages is not likely to stave off a fatal issue ; the cases are almost invariably fatal. More victims have been claimed from the laboratory by this infection than any other, and to man it is probably the most certainly fatal of all the infections to which he is liable.

In horses the mallein test is applied in all cases of suspected glanders, provided that the animal has "no temperature" ; and I am aware that it has also been used in human medicine, but in human medicine its value is not likely to be so great as in veterinary practice. If I may presume to offer any advice to medical men in the way of diagnosis, I would say that the history of the case is more likely to assist in determining the nature of the illness than a long array of possible symptoms. Glanders in man sometimes takes a chronic course, and in most instances is not suspected. It is said that recovery may occur, but this is doubtful. In any case positive diagnosis can be made only by discovery of the

organism, its isolation and cultivation. In these chronic cases the type of infection more nearly resembles that observed in the horse—suppuration and ulceration—suppuration of the lymphatic vessels, with abscesses in different parts of the body, and ulceration of the palate, pharynx and Schneiderian mucous membrane.

Rabies or *Hydrophobia*.—The cause of rabies is not known, but that there is an infective agent is beyond doubt; inoculation of virulent material invariably produces the disease in a susceptible animal. In Ireland we have no rabies, and we have been free from it for some years; it is to be hoped that we shall continue to present a clean bill of health in this respect. The disease is essentially one of canines, dogs and wolves; but other animals, after being bitten, may show the disease. Horses, cattle, sheep, and cats may be infected by a rabid dog. The virus is in the saliva, and though there is a minimum risk of infection from wounds inflicted through clothing, the most serious being those on uncovered parts of the body, still it would not be safe to say that any wound caused by the bite of a rabid dog was not dangerous. In all cases there is only one line of treatment to be followed; the wounds must be thoroughly and effectually irrigated with some antiseptic, and the patient subjected at once to the Pasteurian treatment. The cause of rabies is, as I have said, unknown. The central nervous system, however, is infective, and portions of this, of the medulla particularly, are used for diagnostic inoculations. The rabbit is the animal employed. In all cases where there is reason to suspect rabies, the dog should not be destroyed, but kept under observation—of course under restraint—until symptoms develop. The *post-mortem* lesions in a case of rabies are chiefly remarkable for their absence. There is nothing pathognomonic; the symptoms and history of the case are of more import to a veterinary pathologist than the carcase; hence no dog should be killed unless there are undoubted symptoms of rabies. I merely mention these facts because there is too great a tendency on the part of people to kill dogs showing untoward symptoms, and then to expect one to give a diagnosis. Such diagnosis is not possible

without animal experiment, which in some cases is uncertain. I may be forgiven for mentioning that unless the dog inflicting the bite is rabid there is no likelihood of rabies supervening upon a dog bite, and that there is no danger from such bite other than that of a wound doubtfully contaminated.

Anthrax.—This is an infection produced by the bacillus of anthrax, and has nothing to do with the local suppuration—a boil, sometimes also known as an "anthrax." In man anthrax is an infection which most often follows the skinning of an animal dead of anthrax and inoculation of some portion of the body at the time while handling infective material, or breathing an atmosphere containing the spores of anthrax (wool-sorters' disease), or consuming food or drink containing living spores.

The skinning and opening of carcases of animals dead of anthrax in the United Kingdom is forbidden, but occasionally deaths occur on the farm, for instance, where anthrax is not suspected. Infection (local infection) may occur about the hands or arms, and give rise to malignant pustule. The infection may remain local, and does so if promptly and energetically treated, but, on the other hand, it may extend, the disease becomes generalised, and death follows. Anthrax in the lower animals is a septicæmia. The blood is found swarming with bacilli, the spleen being generally enormous in size. In wool-sorters' disease infection occurs either through the fauces or along the air passages, and an intestinal form is recognised. As I have mentioned previously, the infection is seen especially among those either handling wool as fleeces or combing wool preparatory to manufacturing cloth. It is also seen among those working with hair and hides. The fleeces and hides responsible are imported generally from the East; the organisms in the blood have developed spores, and these spores are liberated as dust during manipulation of the fleece or hide. Precautions are now taken in the large manufacturing centres to prevent infection occurring.

In connection with anthrax infection it may not be out of place to remark that during recent years an anti-anthrax serum has been provided which has been used frequently,

and I believe with the desired results. Indeed, if a layman may again venture to offer advice, as a precautionary measure and as a remedial agent, anti-anthrax serum should be injected as early as possible after a diagnosis has been made. It is likely to prove of great value in cases of malignant pustule, and will certainly assist the surgeon in obtaining a favourable issue.

Actinomycosis.—Among the domestic animals actinomycosis is most common in the ox, it is less common in the pig, and rare in the sheep. It may be seen occasionally in the horse. The cause is a streptothrix, a tissue parasite, and cases are not rare in man. The parasite appears to be found on cereals, as barley and oats, and in the lower animals infection is believed to occur through an abraded mucous membrane, the parasite gaining entrance to the tissues by way of a wound. I am aware that Homer Wright thinks that the organism is a strict parasite, and has no saprophytic existence. In certain instances a young actinomycotic lesion has been found around a piece of vegetable tissue implanted in the tissues. I have seen this in the tongue and cheek; others have noticed it in the tonsil and other parts of the body. It is extremely doubtful if the disease is transmitted from animals to man. It is of some interest to me that the first case of actinomycosis recognised in man in France was diagnosticated by a veterinary surgeon, and it is further well worth mentioning that the iodide of potassium treatment for the disease was the discovery of the late Professor Thomassen, of the Utrecht Veterinary School. In cattle, in which the disease is so commonly encountered, unless there are extreme structural alterations, as, for instance, in the bones, iodide of potassium, given until a moderate iodism is established, acts as a specific. Thousands of cattle previously consigned to a lingering death, if not actual starvation, now recover under treatment, and reach ultimately their destination as desired by their owners. Actinomycosis is most often a local infection; the parasite, as mentioned, is a tissue parasite, though in some cases it is difficult to explain how infection obtained in a particular organ. The parasite appears to be transported

to different parts of an organ, and, doubtless, to different parts of the body, through the agency of leucocytes. On arrest of these leucocytes a minute lesion, an abscess, develops around the parasite. In man actinomycosis is most frequently of a suppurative form, whereas in the lower animals the lesion takes on an indurative form, a new formation of connective tissue develops, and the part, as the tongue, for instance, becomes exceedingly hard—like scirrhus. The difference in the lesion as found in man compared with that in cattle may be explained in part, perhaps, by the difference in the composition of the fluids of the body—*i.e.*, chemical differences—or it may be that the organism producing infection is not always of the same kind. Indeed we know that there are several forms of streptothrix recognised as actinomyces—at least eight—in the tissues, but which differ among themselves when examined in culture.

The actinomycotic infection has a close resemblance to certain forms of tuberculosis, and it is believed by some bacteriologists that there is a close family connection between the actinomyces and the tubercle bacillus.

Variola.—The cause of small-pox is not known, and the various organisms, protozoa and others, believed by some as the cause, are not universally admitted as having the usual connection of cause and effect. We recognise variola in the horse, cow, and sheep, and, according to some, in other animals as well; but whether horse-pox and cow-pox are infections proper to these animals, or only grafted, as it were, upon them, the future will show. It seems to be the opinion of some that these variolæ are only examples of human variola modified in these animals. Certain it is that they are extremely mild infections, and persons inoculated with the virus from the pustules are immune to small-pox. Cow-pox is not uncommon in milch cows, and not infrequently milkers are vaccinated upon the hands and forearms when handling these animals.

Sheep-pox, which, I believe, is not transmitted to man, is of all the variolæ found among the lower animals the most severe. It frequently causes a high mortality. It is

not present, nor has it been observed, in the United Kingdom for many years. Sheep-pox is, however, of great interest to us as bacteriologists, inasmuch as the cause has been demonstrated to be an ultra microscopic organism—an organism so fine as to be able to pass through the pores of a porcelain filter of great density, and one which we are quite unable to see with the highest powers of the microscope. Inoculation of the filtrate obtained after a passage of a suspension of the virus through the filter is capable of setting up the disease. And this brings me to refer to "Foot and Mouth Disease." This is an eruptive fever due to an ultra-microscopic organism observed in ruminants. It is occasionally seen in other animals and in man. The lesions are observed in the mouth, on the gums, palate, and tongue—it is sometimes called "contagious" or epizootic "aphtha," and on the thinner parts of the skin, such as the perineum, scrotum, udder, and especially where skin meets with hoof. Vesicles develop which rapidly burst and expose an intensely inflamed corium. In some cases the secondary symptoms, due to secondary infection, are severe. The disease is not a very fatal one, except in young animals taking milk from infected dams; it is only serious because of its epizootic characters and the necessity for closing markets and fairs. Cases of infection being conveyed to man by the milk are known, the lesions developing in and about the mouth. In calves and lambs the mortality is explained by lesions developing along the course of the alimentary tract, and probably from secondary infections. Fortunately we have not had in Ireland for some years past any foot or mouth disease, though it will be in the recollection of some that a short time ago (1908) an outbreak occurred in a dairy herd in Edinburgh. The virus of foot and mouth disease appears to be very resistant. The Edinburgh outbreak was, doubtless, due to imported fodder—from Holland—and the virus had retained its virulence apparently for some months in the fodder. There appears to be evidence that the virus may maintain its virulence for even a year or two—a very remarkable fact, and one worth keeping in mind.

The various forms of suppuration we meet with in the lower

animals are due, in the majority of cases, to organisms resembling those isolated from man. Staphylococci and streptococci are common, and some of the strains of the latter are extremely virulent for man, as I have reason to know. In addition to these we have not infrequently associated an organism we call the "bacillus of necrosis," one which produces a great variety of lesions in the lower animals. I am not aware if it is commonly recognised in man, but I once read a report in the *Journal of Experimental Medicine* of a case in man where there were peculiar liver lesions. Large areas of necrosis were encountered, associated with a long bacillus, which I concluded was the organisms in question. The liver lesion and the organism were quite similar to those met with in the ox.

Psittacosis is a disease communicated to man from parrots. I am not aware if any case in man has been recognised in this country, but it has been seen in France. The cause is an organism—a paracolon organism with perhaps affinities more nearly related to the organism of human typhoid fever than to the common colon bacterium. In man the symptoms resemble closely at first typhoid fever with pulmonary complications. The infection appears to be more fatal in the aged and badly nourished. The birds, when infected, are evidently sick, sit huddled up, and have diarrhœa. It is while attending to the sick birds, or when cleaning the cages and perches, that man becomes infected. The organism isolated from those dead of the infection is precisely the same as that obtained from the tissues of the dead parrots, and when administered to healthy parrots, kills the birds with all the recognised symptoms and lesions.

It may not be out of place to mention here that we do not find in the lower animals any disease which may be taken for typhoid fever, nor is the organism of typhoid fever pathogenic for the lower animals save in heroic experimental doses. Ordinary infection with typhoid material does not occur. And, again, we sometimes hear it gravely stated that the lower animals suffer from diphtheria. I mean infection by the Klebs-Löffler bacillus. This is not the case. Diphtheria,

such as is seen in man, is unknown in the lower animals save, perhaps—and here the evidence is not convincing—in the cat. Lesions in which the organism of diphtheria has been found are the result of direct infection from a human source. Outbreaks of diphtheria are not of animal origin, they are from a human source, but I am not going to say that the lower animals may not be the innocent instruments for conveying the disease from one centre to another. That is a very different thing. The same applies to scarlet fever.

Lastly, I should like to say a word on *Tetanus*. Tetanus, the result of wound infection by the tetanus bacillus, is common in the lower animals, especially in the horse, cow, and dog. Some places are more tetaniferous, if I may so term it, than others. This has been noticed repeatedly in the veterinary profession, and, I suppose, also in human medicine. The spore of tetanus is found in dirt, and very commonly in the fæces of the herbivora, and this accounts for the frequency of this toxic condition—for tetanus is an intoxication produced by the toxin elaborated by the organism in the wound. In the veterinary profession we have found tetanus anti-toxin to be of the greatest possible value as a prophylactic ; it is of little use once the symptoms have developed. A certain amount of damage has been done already on appearance of the symptoms, and the issue of the case will depend upon the amount of that damage. The only effect the anti-toxic serum can produce in a declared case is to neutralise the poison still being formed in the wound, and this, of course, should be checked by thorough cleansing of the wound. In the veterinary profession, with all its manifold disadvantages in practice as compared even with the least favourable in human practice, we have found it to be good practice to inject a dose of antitetanic serum before an operation. The serum produces a passive immunity which lasts for about three weeks, sufficiently long for the wound to have healed.

Trichinosis—a disease of man and animals due to the presence in the tissues of an animal parasite, the *Trichina* or *Trichinella spiralis*. Man becomes infected by eating the flesh of swine in an uncooked state. Swine are infected by

consuming human fæces containing the bowel form of the parasite, or, more commonly, by consuming rats which harbour the parasite. The parasite in the muscular tissue is in the larval condition, but rapidly matures on being liberated by the action of the gastric juices. The sexes mate, and a numerous progeny develops from each fertilised female in a few days. Some may pass down the intestine, but others migrate to the muscles, possibly in the blood stream, where they become rolled up on themselves, and eventually encysted. In man infection sets up a peculiar train of symptoms, sometimes mistaken for acute rheumatism, at other times for typhoid fever. Examination of the blood in this infection as well as in others, due to the presence of animal parasites, as, for instance, ankylostomiasis, due to *Ankylostoma* or *Uncinaria duodenalis*, shows marked *eosinophilia*, and this indicates or suggests the diagnosis. Actual diagnosis can be made only by a careful examination of the fæces for the parasites or by harpooning the muscles and removing a portion for microscopic examination.

Tæniasis.—The *Tænia solium*, the solitary tapeworm, is the strobilus developing from the hydatid found in the flesh of swine—the *Cysticercus cellulosæ*. The condition is known in swine as "measles"; it, of course, has nothing to do with measles of the human subject. Infection is the result of eating raw or undone pork. The *Cysticercus bovis*, the hydatid of beef "measles," is the hydatid of the unarmed tapeworm of man, the *Tænia inermis*. In both cases the lower animals are infected by eating human excreta, or fodder, or drinking water soiled with dejecta containing ripe eggs of the tapeworm. The lower animals, therefore, merely return the compliment by re-infecting man. The *Dibothriocephalus latus*, the longest tapeworm of man, has its hydatid stage in one of the lower animals—a fresh water fish—the common pike.

Apparently man may also harbour tapeworms commonly found in the dog—the *T. cucumerina*, for instance, and frequently I am afraid man is the host for hydatids of the *T. echinococcus* of the dog. The *Tænia echinococcus* is the

smallest of tapeworms; it is about a quarter of an inch in length, but the eggs produced by the last segment of the worm may cause serious lesions in the body when they develop into the hydatid. I have seen the liver of a cow invaded to such a degree that it weighed 167 lbs., the normal weight being 10 or 11 lbs., and the horse's liver may reach 100 lbs. and more, the usual weight being 12 lbs. Similarly in man, the presence of hydatids may be noticed in different organs, where they may cause serious symptoms, and call for surgical interference. Infection occurs through the drinking water being contaminated by fæces of dogs infested with the tapeworm.

Lastly, as to *Ringworm*. Three forms of ringworm found in animals and transmissable to man are—(1) favus, (2) microsporon, (3) trichophyton. I need not trouble you with the clinical appearance of these, they are all known to you. Ringworm is common in the lower animals, and frequently communicated from them to man. It is not uncommon for herds in charge of cattle to become infected, and favus is probably in many cases of direct animal origin. I have seen it in mice, and I have seen it in cats kept to catch the mice, and what is more likely than that children or others handling the household cat may be infected? In the lower animals different forms of favus are recognised, but the great majority of cases—Sabouraud says 99 per cent.—are due to the *Achorion schönleinii*. Several varieties of microsporon and trichophyton are met with, the different forms being recognised in culture or on microscopic examination. According to Sabouraud (*Brit. Med. Journ.*, Oct. 10, 1908), there is a trichophyton of the fowl, two of the calf and ass, and two trichophytons and two microsporons in the cat and dog. It appears that the horse is most subject to ringworm of all the domestic animals, and up to the present he has assigned to him one favus, two microsporons, and seven trichophytons. It is maintained by Sabouraud that in France, wherever a ringworm in man becomes inflammatory, it is considered to be of animal origin. He also mentions, as we in the veterinary profession have long known, that preparations of iodine are the best remedies for these local infections.

I am grateful to you for your kind indulgence in listening to these remarks. I must now conclude, but the subject is far from exhausted. As I said at the commencement, I could only hope to treat the subject superficially. I hope I have said sufficient to demonstrate, if it were at all necessary, how essential it is that the two professions of human and veterinary Medicine should work together. How useful indeed the veterinary profession may be to that of human medicine I believe is beyond question, and nowhere so much as in public health matters. The modern veterinarian, with his training in pathology and bacteriology, is a valuable asset to the State which the public can use advantageously with profit to the public health. The knowledge he possesses should be placed at the disposal of a medical officer, who could make use of the very special training of a competent official. In the diseases affecting the lower animals, we may learn much which will throw light upon infective processes in man; we are able to examine, for instance, the nature of lesions at all stages of infection, we need not wait until the final catastrophe. In many ways, which we need not wait to discuss, the veterinarian may assist the work of the human pathologist, and, perhaps, most profitably, in those diseases which I have mentioned to you in this Address, the diseases communicable from animals to man, some of which we have seen are common to man and animals.

ART. XVII.—*The Teaching of Practical Midwifery in the Past and at the Present Time.*[a] By HENRY JELLETT, M.D., F.R.C.P.I.: King's Professor of Midwifery in the School of Physic in Ireland, Trinity College, Dublin; Gynæcologist to Sir Patrick Dun's Hospital, Dublin.

THE subject which I have selected as the basis of my Introductory Address is one which has been prominently before the various bodies interested in medical education

[a] Presidential Address delivered at the Opening Meeting of the Obstetrical Section of the Royal Academy of Medicine in Ireland, November 5, 1909.

during the past couple of years, and which has also been the subject of an important debate in this Section of the Academy. I propose to refer to the official regulations which have existed for the teaching of practical midwifery in the past and in the future. The members of this Section labour under no delusions as to the importance of the subject. They see daily, both in their hospital and in their private practice, the results of its neglect in the past, and many of them have worked hard to effect improvement. It is only too obvious, however, that the bulk of what may be called the governing bodies of the medical profession have taken a long time to appreciate the needs of, and for, a thorough practical education in Midwifery and Gynæcology, and though that lack of appreciation was more marked in the past—as I think my address will show—it is still existent. So far as my own experience goes it seems to me that gynæcologists and obstetricians are able to take a broader and saner view of the relative importance of subjects in the medical curriculum with which they are not personally concerned than is the physician or the surgeon. It is only a short time ago that, during a discussion on the teaching of midwifery, a prominent medical man decried the necessity for improving it, and pointed out that already more time was devoted to the teaching of it than to the teaching of diseases of the eye, while, said he, all humanity have two eyes, whereas only a part of it has one uterus. Nor was he willing to accept the fact that the general practitioner for one eye case which he meets which cannot wait for the services of a specialist meets, I suppose, twenty cases of labour whose safety and future welfare are entirely in his hands.

It may be said that this is only the special pleading of a specialist for his own specialty. But what specialist has ever yet advocated the extension of obstetrical and gynæcological teaching beyond the degree required by the general practitioner? All our complaints have been directed against the fact that, while it is the object of all

medical education to turn out not specialists but general practitioners, education in one of the most important branches of general practice was neglected and almost reduced to a farce. It is not so long since the General Medical Council considered it sufficient education in practical obstetrics if a student attended twelve cases of labour, of which he was to conduct three personally under the supervision of any registered medical practitioner. When efforts at reform were made, the upholders of such a system openly expressed the view that the student, as regards midwifery, must obtain experience after qualifying "in the same manner as he does in respect of medicine and surgery." If the subject of midwifery was comparable in its extent with a single disease, such, for instance, as typhoid fever, then the argument might have some weight, since students must perforce go out with only a scanty practical knowledge of individual diseases and acquire a fuller knowledge later. But can such a comparison be made? Is it not more correct to compare midwifery with a group of diseases, such, for example, as the diseases of the thorax, and what clinical teacher would suggest that it was sufficient for a student to examine three cases of thoracic disease in order to acquire a general practitioner's necessary knowledge?

In the spring of 1888 the General Medical Council received a report from their Education Committee, and one part of this dealt with "the importance of increased attention to general and special clinical work." We are concerned with only one of the several recommendations brought forward by the Committee, and this was to the following effect:—

"That every student should be required either to attend for three months the indoor practice of a lying-in hospital, or to have been present at not less than twelve labours, at least three of which he should have conducted personally under the direct supervision of a registered practitioner."

An amendment to the effect that the number of labours to be attended by the student should be increased from

twelve to twenty was rejected, and the recommendation of the Committee was adopted, thus rendering it possible for a student to be qualified to practise midwifery after he had personally conducted three cases of labour under the supervision of any medical practitioner.

In 1891 the teaching of practical midwifery again came before the General Medical Council as a result of a motion moved by Dr. Glover, and seconded by Dr. Atthill, to the following effect:—

"That it is urgently necessary for the Examining Bodies to require of candidates for their diplomas additional guarantees of their practical education in obstetrics; and that candidates at the final examination be required to produce proofs that they have personally conducted at least six, and have been present at at least twenty-four additional labours, or of having attended as pupils for six months a lying-in hospital, or the lying-in department of a general hospital, or a maternity institution, with arrangements for clinical teaching, approved by the Examining Body granting the diploma.

This very moderate proposal was defeated by an amendment which whittled it down a little, only to be itself defeated by another which still further reduced it. Finally, the opponents of any reform considered they were sufficiently strong to move that the Council resolve to adhere to its existing resolution, and this was carried, and the *status quo* maintained.

In the winter session of 1895 the General Medical Council received a petition from the Council of the British Medical Association to the effect that the members of the Association viewed with deep concern and regret the admission of students to their final examination after they had personally conducted only three and been present at only nine confinements. The Council of the Association, therefore, petitioned the General Medical Council to recommend that no student be admitted to his final examination until he proves that he has personally conducted at least thirty confinements under the direct

supervision of a medical practitioner. This proposal removed some of the farcical elements of the existing state of affairs, but inasmuch as it recognised any general medical practitioner as a suitable person to teach practical obstetrics, it would have failed in its object. The petition was received by the General Medical Council, and referred to the Education Committee for consideration and report, a step which was at least a recognition that the existing state of affairs was not perfect, and so was a great advance on the action of the Council in 1891.

The Education Committee, so far as one can judge from the report presented to the Council, gave the matter a very careful consideration, and, though it is impossible to recognise their resultant recommendation as anything but insufficient, it is evident that they had to contend against very serious opposition to any step for the improvement of midwifery teaching. The inevitable compromise resulted, and, while students were to be allowed to put in a three months' attendance at a midwifery hospital if they wished, they were also to be admitted to examination after being present at not less than twenty labours, at least five of which were to be personally conducted under the direct supervision of a registered medical practitioner. This recommendation was adopted by the Council, and remained as their recommendation to the licensing bodies until the adoption, in 1907, of the series of resolutions to which I shall now refer, and which signalled the advent of an entirely new system in the teaching of practical midwifery.

At the May meeting of the Council in 1905, on the proposal of Sir John Williams, it was resolved to appoint a Committee of the Council to inquire into the operation of the rules regarding the midwifery practice required of candidates for medical qualifications. This reference covered a wider field than any previous reference made to any Committee appointed to inquire into the teaching of practical midwifery. The Committee, which had reported in 1895, had been limited in its scope to inquiry

into the attendance by the student on cases of labour under the supervision of a medical practitioner. The reference to the present Committee covered the whole teaching of practical midwifery.

With the object of obtaining information on the subject a series of questions were sent by the Committee to "the licensing bodies, which include teaching institutions, and to other teaching institutions which are recognised by the licensing bodies for subjects other than those of the first year's course." In this respect I think that so far as Ireland, at any rate, was concerned a mistake was made, inasmuch as many of the questions asked came within the purview of the teaching midwifery hospitals rather than of the licensing bodies, who were unable to answer several important questions. It is impossible here to enter into the different questions asked, but one question and its answers may be mentioned:—

Question.—What proportion of your students "attend for three months the indoor practice of a lying-in hospital" as an alternative to not less than twenty cases of labour?

Summary of the answers received from thirty-seven institutions.—In eleven schools none of the students attends for three months the indoor practice of a lying-in hospital "as an alternative to twenty cases of labour": and of these in ten others practically none does so. About 50 per cent. of the students in one school take the alternative. Almost all the students in six schools take the three months' hospital course.

So far as I can judge from a perusal of the replies received by the Committee the taking of a hospital course was a matter of the greatest rarity in any, but in the six schools last mentioned, and in almost all the others, students acquired their knowledge of obstetrics by being present in fact, or in theory, at twenty cases of labour, of which they personally conducted five under the supervision of a general practitioner. Further, it appears, and the Committee in their report emphasise the fact, that in

the majority of schools even the minimum requirements of the Council were not complied with. It is no wonder then that the Committee went on to report that "it seems obvious that, even if the course of study recommended were in itself sufficient, since its requirements are not complied with, there is no evidence to show that persons obtaining qualifications possess the required knowledge and skill for the efficient practice of midwifery."

The recommendations of the Committee were subsequently twice altered before their final adoption, and so I do not quote them in full. They laid down for the first time three important principles which persist in those finally adopted. These were:—

(1) That the student must have received adequate instruction in medicine, surgery, and midwifery before beginning the study of practical midwifery.

(2) That he must have attended the indoor practice of a lying-in hospital or of a general hospital or poor-law infirmary having lying-in wards, before he is permitted to conduct extern cases.

(3) That the certificate showing that he has conducted the necessary number of cases must be signed by a member of the staff of one of the institutions mentioned in (2), thus doing away once and for all with the system of fortuitous instruction by any general practitioner who might or might not be suited to impart it.

This report came in May, 1906, before the General Council, who ordered it to be sent to all the licensing bodies and teaching institutions, inviting criticism thereon. The criticisms received were then considered by the Committee, and, as a result, certain minor changes were made in their recommendations. The consideration of the Committee's Report by the Council was, however, postponed in order to give various bodies which had not already replied an opportunity of doing so, and, in consequence of these replies, some further alterations were made in the recommendations. Finally, in May, 1907, the General Council adopted, almost unchanged, the

recommendations of the Committee, with the result that, on paper at all events, a very definite and practical effort was made radically to improve the teaching of practical obstetrics.

I trust I have not wearied the Section by this dry *précis* of the past history of the teaching of Practical Midwifery. If I have not, I should now like to say a few words on the probable effect of the recommendations of the General Medical Council on the future of such teaching. The recommendations of the Council are only recommendations, and, as such, can be ignored in part or in whole by the licensing bodies. Some idea as to the probable attitude of the latter can be gleaned from their criticisms of the first report of the Practical Midwifery Committee of the General Medical Council, and in these criticisms there is manifest an extraordinary divergence of opinion. The majority of the London Medical Schools consider it quite impracticable to insist on regular attendance upon the indoor practice of a lying-in hospital. The majority of the Scottish licensing bodies, and of the English Universities, and all the Irish bodies, view the proposal with approval. The University of Manchester expresses "unqualified approval of the recommendation that certificates of attendance on labour shall be accepted only from a member of the staff of a public lying-in hospital, or of the maternity charity of a general hospital." The University of Birmingham considers that "general practitioners should not be altogether excluded." The Professor of Midwifery at Bristol University College considers "that practitioners who have received their education in lying-in hospitals only are not so reliable as those who have been taught in an extern maternity." The Professor of Midwifery at St. Mungo's College, Glasgow, is "of opinion that a student will learn more by attending in the wards of a hospital and seeing cases properly conducted than by attending scores of cases in their own homes."

These are only a few instances taken at random, but they serve to show the differences that exist.

It is probable—indeed, almost certain—that the large Universities whose supply of students is constant and independent of minor alterations in the curriculum, will adopt the recommendations of the Council in their entirety, while licensing bodies who are, so to speak, competing against one another for students, will endeavour to present their curriculum in as attractive a form as possible. Similarly the schools which consider the recommendations impracticable will doubtless continue to do so until the licensing bodies to which the schools act as feeders demonstrate their practicability by making them essential.

Here, in Ireland, we are principally concerned with the actions of the Irish licensing bodies, and, so far as I am aware, the Conjoint Board of the Royal Colleges have so far alone modified their regulations. Their alterations are thus of considerable interest as foreshadowing to some extent the possible action of the other bodies.

Before referring to them, it is necessary to state that for many years past in Ireland the regulations for the teaching of practical midwifery have been sufficient, if the student chooses to benefit by them. Instead of its being possible to become qualified after seeing twenty cases of labour and conducting five, the Irish student had to attend for six months in a maternity hospital, and to conduct some twenty cases. I emphasise this point because there is a danger present that the efforts of the General Medical Council to produce a "levelling" up of midwifery teaching in England and Scotland may result in producing a "levelling" down in Ireland, and, indeed, we shall see that, in the case of the Irish Colleges, already it has been decided to reduce the course in a maternity hospital from six to three months in order to bring it into closer conformity with the recommendations of the Council.

The regulations of the Colleges which have been agreed on after a prolonged discussion, and which will shortly come into force, are as follows:—

(1) Every student before beginning the study of practical midwifery must have attended a course of lectures on midwifery, and must have held the offices of clinical medical clerk and of surgical dresser.

(2) Every student must attend the indoor practice of a lying-in hospital, or the lying-in wards of a general hospital, for a period of three months, to the satisfaction of the medical officer in charge, and, after having received therein practical instruction in the conduct of labour under the personal supervision of a medical officer, must attend twelve cases of labour under official medical supervision.

(3) Every student must attend on at least thirty-two occasions on the regular clinical instruction delivered in the wards of a lying-in hospital, or in the lying-in wards of a general hospital.

(4) All certificates testifying that the student has complied with the above regulations must be signed by a medical member of the staff of a lying-in hospital, or by a medical member of the staff responsible for the management of the maternity wards of a general hospital.

The foregoing regulations are admirable in many respects, but in one particular they are retrograde. It was unwise from every point of view to reduce the course of hospital teaching from six to three months. It was unwise from the point of view of the student's education, because a three months' period is insufficient, and it was unwise from the point of view of his comfort, because it would be easier for him to obtain the necessary number of cases and the necessary hospital attendance in a period of six than in one of three months. On the other hand, it is most important to have obtained a definite pronouncement that the student must attend at the regular clinical instruction delivered in the wards of a hospital.

What the action of the other Irish licensing bodies may be remains to be seen. I trust that it will be in the direction indicated by the regulations of the Royal Colleges, but that there will be no shortening of the periods of

hospital attendance. It is for the Irish school to improve and to increase its present standard, and not to let itself forget that what may be improvement in other teaching centres may be retrogression in Ireland.

There is just one other point to which I wish to refer before I finish. The General Medical Council, in their final recommendation to the licensing bodies, added to the recommendation already mentioned another to the effect that it is necessary for the licensing bodies "in the public interest" to establish clinical and practical examinations in midwifery and gynæcology in connection with the qualifying examinations. At first there was considerable uncertainty as to the practicability of such a scheme, but, when it was examined closer, it was found to be quite workable. Trinity College and the Royal Colleges have already adopted it, and, in future, all their students will have to present themselves for such an examination. Its value, if it is properly carried out, is undeniable, and it remains with the examiners to see that the examination is a reality.

If we contrast the present state of affairs with what existed in 1888, we shall see what a great advance there has been in the teaching of Midwifery, and this Section of the Academy, as a Section, and many of its members individually, have had a great share in this. In 1888 it was impossible for any student who merely followed official requirements to acquire a sufficient knowledge of obstetrics before he was qualified to enable him to undertake the care of the average case of labour. At present, under the new regulations, it is possible for most students to obtain the necessary knowledge. It must be the object of the future to ensure that it is impossible for him to become qualified without such knowledge.

PART II.

REVIEWS AND BIBLIOGRAPHICAL NOTICES.

Studies in Tuberculosis. By HENRY CLARKE, M.D., Physician to the Liverpool Hospital for Consumption. Liverpool: The University Press; London: Archibald Constable & Co. 1909.

WE have read this short monograph with considerable interest. It contains three chapters. The first deals with the diagnosis of consumption; the second with the prevention of tuberculosis; and the third with the treatment of tuberculosis. A bibliography of recent literature, more especially of that dealing with the tuberculin treatment, is added, and the individual papers referred to are, for the most part, briefly summarised. Amongst the numerous interesting questions dealt with by the writer one of the most important is the discussion of the relative merits of the English and German methods of administering tuberculin. The German method, as is well known, is intensive in its nature; the English, as advised by Wright, is the reverse of this; and if Wright's observations can be relied upon the German method is not only faulty, but dangerous. Clarke, however, finds the German method the better of the two as far as clinical results are concerned, and also finds no lowering of the opsonic index to result during such a course of tuberculin; on the contrary, the index is raised. This conclusion is an all-important one; if it is confirmed it will tend to upset many of Wright's conclusions, though only, of course, as far as tuberculosis as distinct from other infections is concerned. For the present one can only suspend judgment until much more evidence has accumulated. With another statement of Clarke's—namely, that the determination of the opsonic index is unnecessary for treatment—we are in complete agreement.

In the chapter on diagnosis the writer deals, amongst other

methods, with that of von Pirquet, which he regards as fairly reliable. Our own experience of this cutaneous test is that it cannot be depended on. Calmette's test has been discarded by the author, though he has not had any personal experience of ill-effects from its use. As regards prevention of tuberculosis, partial segregation, compulsory notification, and education of the tubercular individual constitute in the writer's opinion the most important objects to be aimed at at present.

The Pocket Medical Dictionary. Edited by W. A. Newman Dorland, A.M., M.D., Assistant Obstetrician to the Hospital of the University of Pennsylvania; Fellow of the American Academy of Medicine, &c. Sixth Edition, revised and enlarged. London and Philadelphia: W. B. Saunders Co. 1909. 32mo. Pp. 598.

"The American Pocket Medical Dictionary" has steadily grown in favour and popularity since it was first published in the autumn of 1898. During the eleven years which have since elapsed the book has run through five editions and has been reprinted on ten occasions.

In this, the sixth, edition the text has been carefully revised, and many hundreds of new words have been added. Much attention has been paid to quantities, pronunciation, and spelling, and in general the definitions are accurate. We do not think, however, that "Quincke's sign" is correctly explained as a "blanching of the finger-nails at each diastole of the heart" [in aortic insufficiency]. The finger-nail is blanched by pressure of the observer's finger or thumb, and a transitory blush accompanies the systolic wave sent into the arterioles of the finger by the contraction of the powerful, because hypertrophied, left ventricle. The blush is transitory because the regurgitation reduces the arterial pressure momentarily to a minimum.

There are many interesting articles in the Dictionary. One, for example, on Ehrlich's side-chain theory of immunity and cytolysis gives as clear an explanation of that theory as we have ever met with. The volume closes with a useful table of doses in both apothecaries' and the metric systems.

E. Merck's Annual Report of Recent Advances in Pharmaceutical Chemistry and Therapeutics, 1908. Vol. XXII. Darmstadt: E. Merck. 1909. Pp. 394.

THERE is probably no publication which gives so full and so scientific an account of the progress of Pharmacy and Therapeutics as is contained in the pages of E. Merck's Annual Reports, of which this is the twenty-second issue.

The first hundred pages—about one-fourth part of the entire book—form a treatise of great value on Organotherapy and Organotherapeutic preparations. This section is enriched by copious references to the literature, the first being to the Indian *Ayurvedas* of Susrutas (1400 B.C. ?), in which is to be found a description of the use of testes in the treatment of impotence in man.

Other Preparations and Drugs occupy the closely printed pages from 103 to 348, and the volume concludes with a bibliographical index, an index of authors, a general index, and an index of diseases, symptoms and indications for treatment.

The book is not of the nature of an advertisement: it is the outcome of an honest desire on the part of the author to furnish a brief and impartial review of the therapeutic acquisitions of the year with which it deals—1908—irrespective of his immediate interest as a manufacturer.

We are given to understand that a limited number of copies of the book, which comprises 348 pages of literary matter, will be sent free to members of the medical profession on application to Mr. Merck's London Office, 16 Jewry Street, E.C. The book may also be obtained through booksellers at a cost of one shilling and sixpence per copy.

A Manual of Natural Therapy. By THOMAS D. LUKE, M.D., F.R.C.S. (Edin.). Bristol: John Wright & Sons. 1908 8vo. Pp. xvi + 303.

THE author has grouped under the title of "Natural Therapy" the uses of water, heat, light, massage, diet, and electricity in the treatment of various maladies.

The book commences with a short history of bathing, and

after dealing with the various forms of treatment, concludes with chapters on Hydropathic and Cure Establishments, and a bibliography which will be found most useful in looking up books of reference on the various heads.

The aim of the work would appear to be to supply a much-needed want—that of indicating the various modern modes of treatment and giving a fair idea of the results likely to be obtained by them, to practitioners who do not themselves undertake such means of treatment, but desire to send patients to those who do so, or to hydropathic establishments.

The descriptions of apparatus and technique are hardly sufficiently full to act as a guide for the actual employment of the treatment indicated, nor would this be possible in the scope of the work.

Taking this as the object of the work, the book has much to commend it, as the descriptions are concise and clear, and the plates add much to its value.

Death and its Verification. By J. Brindley James, L R.C.P.I., M.R.C.S.Eng.; Physician to St. Mary's Training College, Hammersmith, &c. London: Rebman, Ltd. 1908. Pp. 56.

Dr. Brindley James is Examining Physician-in-Chief to, and Vice-President of, the Association for the Prevention of Premature Burial. Accordingly, he has given us, in fifty pages, his views as to the advisableness of employing many and accurate tests to establish the fact of Death. He has arranged a "Death Verification Bag." When a practitioner is to sign a death certificate he should bring this bag to the presumed corpse; he will find in this bag all that is needed to verify the death. The bag contains fifteen instruments or articles, and seven bottles of solutions to be used in the tests.

In view of this elaborate procedure we are not surprised to read: "It would be clearly unjust to expect the trouble involved in the application of these tests to be taken by the hard-worked general practitioner without proper remuneration." Quite so.

PART III.

MEDICAL MISCELLANY.

Reports, Transactions, and Scientific Intelligence.

ROYAL ACADEMY OF MEDICINE IN IRELAND.

President—Sir Charles Ball, F.R.C.S.I.
General Secretary—James Craig, M.D., F.R.C.P.I.

SECTION OF MEDICINE.

President—Walter G. Smith, M.D., F.R.C.P.I.
Sectional Secretary—F. C. Purser, M.D., F.R.C.P.I.

Friday, October 29, 1909.

The President in the Chair.

On some Relations of Physic to Physics, and their bearing upon Therapeutics.

The President (after some introductory remarks) referred to the decay of homœopathy, and to the rise of "Christian Science," that audacious fraud and moral influenza, the christianity of which is as bizarre as its science is contemptible. Attention was then drawn to the parallel courses of modern physiology and modern chemistry in returning to the closer study of their respective units—viz., the cell and the atom. The general physico-chemical conditions of the human body were briefly discussed, and in regard to the problem of the mystery of life, the President accepted Du Bois Reymond's dictum—*Ignoramus et ignorabimus*. In regard to the highest sphere of inquiry—viz., that of mental processes—it was pointed out that Johannes Müller hit the mark when he said—*Psychologus nemo nisi physiologus*.

In conclusion, the subject of radio-therapeutics was briefly touched upon, and gratification was expressed at the foundation of a British Radium Institute.

[The President's Address is published in full at page 401.]

SIR EDWARD BARRY, BART., M.D., F.R.S.;

Physician-General to His Majesty's Forces in Ireland, and Professor of Physic in the University of Dublin.

By T. Percy C. Kirkpatrick, M.D., F.R.C.P.I.; Physician to Steevens' Hospital, Dublin.

Among the physicians who practised in Ireland during the eighteenth century few occupied a more prominent position than Edward Barry, yet at the present time very little is known of his life or work. Webb in his "Compendium of Irish Biography" does not mention him, only a few lines are devoted to his memory in the "Dictionary of National Biography," and, as far as we know, no attempt has been made to write his biography or to analyse his work.

Edward Barry was born in Cork in the year 1698, (1) his father, Edward Barry, M.D., being already in practice in that city. To what particular branch of the Barry families in Cork Edward belonged we have not been able to ascertain, but it is suggested that he was a relative of Nathaniel Barry, of Cork, an apothecary, and the fact that one of his brothers and his own eldest son were given that name makes the suggestion very probable. The first thing we learn of young Barry is that he was admitted a scholar of the House in Trinity College, Dublin, in 1716. (2) He must have entered college in 1713, at the age of fifteen, for we find him graduating B.A. in the summer of 1717. A few years before Barry entered college an anatomical department had been started there, and the dissecting room was opened in 1711. At this time lectures were being given in anatomy, in botany, and in chemistry; there was also a professor of medicine, but the number of medical students in the University was small, and we have no information as to whether Barry was one of them or not. It is very probable that he did attend some medical lectures while in College, for we find him on the 25th of April, 1718, "entered on the physic line" (3) at Leyden, where he graduated M.D. the following year. A copy of his Latin graduation thesis, entitled "Dissertatio Medica Inauguralis de Nutritione," is preserved in the Library of the British Museum. While at Leyden Barry studied physic

SIR EDWARD BARRY, Bart., M.D., F.R.S.

under the great Boerhaave, to whom he afterwards refers in terms of great respect; but it is hardly possible that he could have derived so much benefit as he maintains he did, unless he had some knowledge, at all events, of anatomy. During part of the time that Barry was in Trinity College, Dr. Bryan Robinson was Professor of Anatomy, and to him Barry refers in one of his books, and he also appears to have been Robinson's physician during his last illness in 1754 (4).

After leaving Leyden Barry appears to have started the practice of his profession in his native city of Cork on Orrery Quay. In or before the year 1725 (1) Barry married his first wife, but we have been unable to ascertain her name or to find any trace of the marriage license in the Irish records. By her he had four sons and one daughter. The eldest of his sons, Nathaniel by name, followed his father's profession. In 1726 Barry published in Dublin his first book—"On a Consumption of the Lungs," and it was reissued in the following year in London. In this book he tells us he largely incorporated his Leyden graduation thesis. In 1733 he was elected a Fellow of the Royal Society of London, but he does not seem to have contributed anything to the proceedings of that body. About this time Barry contributed two papers—one to the first and one to the third volume of the "Medical Essays and Observations," published by a Society in Edinburgh, and these, together with his work on Consumption, helped no doubt by his influential friends, gained for him admission to the ranks of this illustrious Society.

In "The Orrery Papers," (5) edited by the Countess of Cork and Orrery, and published in 1903, there is quite a long correspondence between John, 5th Earl of Orrery, and Dr. Barry, extending from the year 1745 to the year 1758. This correspondence deals with a variety of subjects, and from it we learn something of the character of Doctor Barry. Lord Orrery enjoyed some reputation as a writer, and his translation of the letters of Pliny the Younger was well spoken of at the time. He is, however, best remembered for the very unfair and disingenuous "Life," which he published of his friend Dean Swift.

Writing from "Corke, March 10th, 1732/3," to Thom Southerne, Lord Orrery says: "At this melancholy Place your Letter of ye 20th of Feb. reached me: I thank you for such a Cordial, for indeed I stand in need of very strong Restoratives to preserve the Gloom and Horror of this City from enveloping

my Heart. I am at the House of a most eminent Physician, a most agreable Friend. I could not forbear shewing him your Letter ; I am proud of your Friendship, and happy in that paternal Tenderness which in every Word of your Epistle cheers my very Soul. Doctor Barry (for so my Friend is called) at the same time that he is the Esculapius of the Age, seems to hide the Artist under the more acceptable Character of the fine Gentleman. The sweetness of his Temper, the genial Turn of his Conversation, join'd to his universal knowledge of Men and Things, make him at once the Admiration and Delight of All who are happy enough to be his Companions. Oh ! my excellent old Man ! Two or three such Friends as You and Dr. Barry in the oak Parlour at Marston would almost make me forget my Sorrows and wish to Live." Even though we make full allowance for the " profuseness of complement that largely discounts sincerity " which is evident in Lord Orrery's letters we may fairly consider that the man of whom this letter was written possessed those qualities which make an agreeable companion and a good friend.

In a letter to Lord Orrery, dated " Jany. 22d, 1735/6," Dr. Barry tells him that he is enclosing a letter addressed to a mutual friend, one Will Taylor. His treatment of this Will Taylor to some extent justifies Lord Orrery's appreciation of " his universal knowledge of Men and Things." He says : " While his heart was warm for Miss Southwell, he gave a Commission to his Mercht to send him a Hampier of Burgundy, and another of Champagne. It was charged at the first Price ; he told me afterwards I must take half, and gave directions to Mr. Harper to send it to me. He designs, I doubt not, to make me pay for it, which would quite destroy its flavour. This I would willingly prevent, for 'tis the best I have tasted. I have now sent him a letter of Thanks, not in the least suspecting but that he intends it for a Fee. Observe his countenance when he reads it ! " Writing in the following April, Barry says : " I'm concerned to hear that Swift is confin'd by some Disorder ; I hope nothing but a bilous cholic, which a few Satyrical evacuations will remove." In the next two letters we get a glimpse of the medical treatment of common ailments in the early part of the eighteenth century. Barry writes : " May 18th, 1736. I was mad enough to go to Kinsale last Wednesday and return the same Day. I inflamd my Blood by this unusual exercise and took Cold. By being twice blooded, Watergruel and Confinement, I am now free from any

Complaint of Consequence." Then again: "May 25t, 1736. By three times bleeding and applying Cantharides I am entirely free from a Fever, and have but weak remains of my Cough, but still confine my Self to milk morning and evening, and a total abstinence from Wine. I visited my patients these two days. Dean Ward will tell yr Lordship that all this was unnecessary, and perhaps he is in the right of it, he would not believe that I had anything of a Colic when I was in most exquisite pain. Yr Conduct, my Ld, has been too much the reverse of mine, you have been too careless, and I am too anxious and busy in the use of medicines. I own I have an aversion to pain, and I know the dangerous Fire of my Constitution can only be appeas'd by a large Sacrifice of Blood. These visits of Sickness are the most usefull Lectures of Philosophy, tho' for my part I would rather continue ignorant; however, I hope they will make us more prudent in our Conduct for the future." In a letter dated "Orrery Quay, Feb. 1st, 1736 37," he says: "While I thought myself invulnerable and had bid Adieu to all pain, I was seizd with a confounded toothach, I had the suspected one extracted, but since it has raged more violently in the rest. I must wait with patience for ease. . . . I have spent these three or four nights past in chewing Tobacco and reading Rollins History." On the 19th of May, 1738, he writes from Orrery Quay to congratulate Lord Orrery on the approach of his second marriage, and says: "Poor Boerhaave is dying in an asthma, and, as he says himself, from a collection of purulent matter in his Thorax." Towards the close of the year 1739 Barry left Cork to settle in Dublin, and the following letter from Lord Orrery to him on that occasion shows what was then expected of a physician. We often hear very similar advice given at the present day:—

"Caledon, *Nov.* 30*th*, 1739.

"My Dear Doctor,—I welcome you most heartily to Dublin. You are now in your proper Sphere, where you cannot fail to shine with a Lustre far beyond all the lesser Lights of the Firmament; but you must yet awhile look upon yourself as only rising into Glory; and at the first dawning of your Appearance you must expect to meet with some Clouds and noxious Particles that may obstruct the force of your heat and the brightness of your Rays. The finest Noons begin with the dullest Mornings. Fogs and Vapours precede Sunshine; on the other hand, if the Mornings

be too early bright, the Noon is overcast, and the Sun sets amidst all the Terrors of Erebus and Nox. Your Morning, my dear Doctor, may possibly be cloudy, but I shall see your Meridian darting forth your Beams and at once giving Warmth and Light to the whole Globe of Ireland. It is very certain the *Genus irritable Fratrum* are awakened at your Approach. Be arm'd then against the various Monsters, that for want of other poisonous Animals, are particularly plentiful in the City of Dublin. *Gorgones, Harpyiaeque et Forma tricorporis Umbra* consider now as Shadows. Lett them hiss. Lett them crawl; and lett them try to hurt You. Your Power is from Phœbus, and You are invulnerable. They will soon find You so, and they will return disappointed to the Ooze and Filth of the Liffey. I hear You do not intend at your first Appearance to rowl over Essex Bridge in your own Chariot: I am sorry for it, for a Chariot seems not only necessary if you have great Buisness, but more so if You have less than your Skill entitles you to. Oeconomy may exert itself in a thousand Instances more properly than in this. The Brotherhood will rejoice at it, and the proud, the rich and the vain (a numerous and mighty Generation) will scorn to send for a Physician who has not a Chariot to grace the outside of their Portal. Consider too, whilst You are box'd up in your Chair, You may be crushed and destroy'd and run over by some hasty Member of the Fraternity, as he flies with the Wings of the Wind and the Horses of the Sun to dispel the Gout, the Jaundice and the Devil; and it is too true that Ward, or Mrs. Stevens could be sooner with a Patient if they went in a Coach than Apollo himself could be if carried in a Sedan. No, my dear Doctor, if you turn your Chariot into a Chair, I'l turn my Coach and Six into a Kings-End Carr. Adieu. Orrery."

On his arrival in Dublin, Barry proceeded to take his medical degrees in the University. At that time the examiners for these degrees were the Censors of the College of Physicians, and in the minute book (6) of that College, under the date of 24th November, 1739, we read: "Mr. Edward Barry examined for his Batchelor's Degree and admitted to perform his Acts." On the 8th of March following it is recorded that "Mr. Edward Barry was examined and admitted to perform his Acts for his Doctor's Degree." These degrees were conferred at the Summer Commencements of 1740, and on the 22nd of July of that year Dr. Barry was elected a Fellow of the College (7). On St. Luke's

Day, 1741, he was "chosen Censor and Register." Soon after he came to Dublin, Barry had the misfortune to loose his first wife, she dying "in childbed, 5th May, 1741" (1). At this time Barry was living in College Green, where he continued to reside for more than ten years. In spite of the prognostications of Lord Orrery, Barry seems to have been almost at once a success as a Physician in Dublin. By Patent (9), dated 18th of April, 1745, Barry was appointed Physician-General to the Forces in Ireland, in succession to Upton Peacock, M.D., and on the 9th of October following he took his seat and oath as Member of Parliament for Charleville, Co. Cork (10). In December, 1746, Barry married his second wife, Jane Dopping, (11) daughter of the Bishop of Ossory. Miss Dopping had several distinguished medical relations; her grandmother was a sister of Sir Thomas Molyneux, who was himself married to her mother's sister; her mother was a daughter of Dr. Ralph Howard, who was Regius Professor of Physic in the University, and three times President of the College of Physicians (7). There were no children as the result of this marriage, though Lady Barry outlived her husband by a year. In 1749 Barry was elected President of the College of Physicians, and in 1751 he had started to build his house on the outskirts of Dublin. Writing on May 2nd, 1751, to Lord Orrery (5), he says: "My little Villa begins to ryse above the Ground. I shall be happy there as Pliny was at Laurenti. Then as I have been a slave to the town, I shall think my garden and my park an Elysian field where I can freely breath airs of my own. I shall sleep better, and, of course, complain less of Headach; perhaps too I shall attempt to write." The house here referred to was at first known as "The Hill," later it was called "Barry House" (12), and now is known as "Mespil House." To this day the ceilings exhibit some of the most beautiful workmanship to be seen in Dublin (13*a*). Barry does not seem to have lived much in this house, for Gilbert (13) tells us that "Victor says (writing from Dublin to Spranger Barry in 1753): 'At present the best part of my agreeable Philosophical hours are spent here in College Green, with my worthy friend Dr. Barry, with whom I sup every Sunday during the year; you may guess you are often our favourite subject—and some late very whimsical accounts of you have afforded us matter for speculation; however, you know, at all events, we are your fast friends.'" When Barry left Dublin, Barry House was set to the Recorder. On the marriage of his

fourth son. Robert, Barry settled this house on him, but from 1777 to 1793 it was the residence of Robert Hellen, Solicitor-General, and afterwards a Justice of the Common Pleas. In 1754, on the death of Bryan Robinson, Barry was elected Regius Professor of Physic, which appointment he held till he left Dublin in 1761. In 1759 Barry's second book was published in London. The copy of this book at present before us was that given by the Author to his friend, Lord Orrery, and contains besides a Latin inscription in Barry's handwriting, dated April 5th, 1759, the following note written by Lord Orrery: "This is the first book of Physic that I ever read. It may very well be the last, because to me it seems to contain all that I or any other man need to know of Medicine, and the nature and state of the human body. The style is excellent and elegant: much learning is properly diffused throughout the whole. Nor can I possibly express the pleasure I have received, in beholding the noble flight, which my Friend who is a *rara avis*, has made, eagle like, into the highest regions of fame. Marlbro' Street, April 10, 1759. C. & O." On November 20th, 1759, Barry was incorporated M.D. at Oxford (14), and he appears to have made up his mind to try practice in London, for we find him granted a License to practice Medicine from the same University on the 30th of June, 1761. On the 30th of September of the same year he was elected a Fellow of the College of Physicians of London, having already on May the 18th been permitted to become an Honorary Fellow of the Dublin College. In that year also he was succeeded in the Professorship of Physic in Dublin by William Clement, M.D. He was chosen Censor of the London College in 1763 (3). At the dissolution of the Irish Parliament on November 25th, 1760, Barry vacated his seat for Charleville, and in the next Parliament was succeeded by his son Robert. In connection with this seat we have a curious note in a codicil to Barry's will, dated September 28th, 1774. He says: "I leave to my son Robert Barry the sum of £300, left to me by his (Mr. Lyons) brother, my dear friend, with the interest thereon, which now amounts in the whole to about £450, and what is justly due to me for my journey and attendance at Marston, where I was sent for, after this will for which and frequent attendance on the present Lord's family I was never paid, but if by his Lordship's recommendation my son Robert is chosen into Parliament I Cancel this debt." His son Robert was elected, whether by "his Lordship's recom-

mendation" or not, for we find it stated in an official and contemporary manuscript of the Irish Parliament of 1775 (15) as follows: "Barry, Robert B., of Charleville. Bought in by Lord Shannon. Senechall of the King's Manours £600. Commissioner of Appeals £300 and King's Council. Supports from Situation. Attached to Lord Shannon."

We do not know what success Barry met with in London, but if we are to believe Johnson, it was not as great as he expected.

Boswell (16), describing a dinner at Mr. Thrale's on Wednesday, April 10th, 1776, makes the following remark: "Johnson mentioned Dr. Barry's System of Physic. 'He was a man,' he said, 'who had acquired a high reputation in Dublin, came over to England and brought his reputation with him, but had not great success. His notion was, that pulsation occasions death by attrition; and that, therefore, the way to preserve life is to retard pulsation. But we know that pulsation is strongest in infants, and that we increase in growth while it operates in its regular course; so it cannot be the cause of destruction.' Soon after this he said something very flattering to Mrs. Thrale, which I do not recollect; but it concluded with wishing her a long life. 'Sir,' said I, 'if Dr. Barry's system be true, you have now shortened Mrs. Thrale's life, perhaps some minutes, by accelerating her pulsations.'"

About 1769 or 1770 Barry left London and settled in Bath, where he remained till his death on the 29th of March, 1776. His will, which is dated 1771, October 17th, describes him "as now resident in the City of Bath." By this will he left the property that he had bought from Lord Egmont at Dundeedy, Co. Cork, to his eldest son, Nathaniel, with various charges for his other sons. His daughter Jane, who was married to Robert Jephson, got the furniture in his house at Bath and also his plate. He bequeathed "To my dear friend Mr. Ponsonby my silver dish and lamp, my fine Japan set of china plates and dishes and £100." This last bequest was made in a codicil, dated October 26th, 1773. The last codicil to the will is dated February 22nd, 1776. He left an annuity to his sister Jane, and also to his servant in recognition for his attention to him during his long and tedious illness. Sir Edward was succeeded in the baronetcy by his son Nathaniel, who was a distinguished physician in Dublin, and whom Cameron (9) tells us "Mr. Grattan characterised as the most accomplished gentleman he had ever met." Nathaniel Barry was

President of the College of Physicians in 1767, and affords the only instance of father and son being both Presidents of the College during the father's lifetime. The portrait which we reproduce is from a photograph of the picture of Barry in the College of Physicians. This picture was given to the College by the late Sir Henry Marsh, Bart., and is attributed to Sir Joshua Reynolds (3).

We append an analysis of Barry's principal Medical work "On Digestion," as it gives one an idea of the character of the medical teaching in Dublin about the middle of the eighteenth century, and it also helps us to form an estimate of the author's worth as a physician. Barry appears to us to have been a fine type of the educated physician of his time, a good scholar, a shrewd man of the world, and though biassed in his ideas of Medicine by the opinions of his teachers, yet sufficiently emancipated from them to be able to make good clinical observations and to direct his treatment accordingly.

There is practically nothing in Barry's first work which is not also contained in his second, published some thirty-three years later. In the preface to the work on "Digestions" he says: "It is now more than thirty years since I published a 'Treatise on a Consumption of the Lungs'; in which I attempted to explain their Structure, and the Nature of Nutrition: The Principles, from whence I chiefly derived my Observations, were such as the learned Dr. Boerhaave had laid down: I regarded him then with all the favourable Prejudice, and warm Gratitude of a Pupil; nor has the Experience of many Years altered my Opinion. His Reasoning on the animal Oeconomy, and his general rules of Practice, will be esteemed, while true Philosophy prevails, and Nature is the Guide, which directs the Physician's Conduct." The earlier work is incorporated practically word for word in the later, with the addition of some fresh observations and illustrative cases. Under these circumstances it will suffice if we consider the opinions as they are expressed in the work on "Digestions." In the preface to this work he explains the principle which underlies his treatment of the subject in the following words: "The Rules for preserving Health, chiefly depend on maintaining such an uniform strength in the different Digestions, that the Aliment should be assimilated to the animal Fluids, and the Discharges be equal to the Supplies, and in a just Proportion to each other: Diseases will arise when they deviate from this Standard; and

their Difference will depend on the Importance of the Digestion, or Discharge, and the Degree, in which their principal Organs are affected."

A human body is composed of an almost infinite number of vessels with fluid circulating in them, and consequently from its very nature is subject to constant decay, for " attrition is the unavoidable effect of motion." " These continual abrasions of the solid parts, and the losses which the fluids sustain in respect to their quantity, require a constant repair; which is likewise made more necessary by the quality of the fluids being so altered by repeated circulations, and by being deprived of their finest and most diluting parts, that instead of continuing fit for nourishment, they at length become destructive, and acquire in some degree the nature of a mineral poison—and from this cause, such as perish by hunger, are generally seized with a raving madness before they die." " The necessity of a constant repair of the solids and fluids being thus evident, I shall endeavour to explain the different digestions which the aliments suffer, and the necessary excretions, or discharges which are made from thence, until they are converted into an animal fluid, fit for nourishment." " All fluids are produced from what we eat and drink, and all solids are composed of the materials which these fluids contain." The first digestion consists in the preparation from the food we eat and drink of a laudable chyle which is absorbed from the intestines. " The food taken for nourishment is greatly prepared by mastication, which breaks and reduces it into smaller parts, and mixes it with the mucus of the mouth, and the salival juice, whose great usefulness may be known from its origin (being separated from the purest arterial blood), and the good effects it produces by being swallowed: Whereas such, who imprudently discharge this useful humour, become more liable to indigestion, and a bad habit of body." The importance of good teeth is thus evident, and—as he says—this explains the observation of Hippocrates—" That such as live to a great age have many teeth."

The stomach is one of the most important organs of the first digestion, and it acts on the food in three distinct ways. First by its heat, which " in a healthy man is greater than the common heat of the sun in a summer's day." By means of this heat the food is " attenuated and reduced into a more soft and fluid substance." This heat also causes the air that is swallowed with

the food to expand, and so helps to break up the food particles. The second action of the stomach is the result of the action of the separated or contained juices. The glands of the stomach produce a mucus which defends the walls of the stomach from injury by the contained food, and the fluid is chiefly of use in diluting the food stuffs. When fermentation takes place in the stomach it is, as it were, accidental, and the result of the retention of the remains of a previous meal. Fermentation is not due to anything derived from the stomach itself, and is not a principal agent in digestion; "neither is such fermentation, though often begun ever perfected there; for that operation can never be completely finished unless the fermenting bodies remain undisturbed in the same vessel, until their intestine motion gradually ceases, which is prevented by the muscular fabric of the stomach." The third great factor in gastric digestion is the mechanical action of the muscular wall of the stomach, assisted by that derived from the neighbouring organs. The stomach does not actually grind the food as some have suggested, but it is "comminuted" and determined towards the pylorus. The situation of the stomach between "the largest and most warm bowels of the body," and "behind it is placed the aorta, the largest vessel in the body, whose heat and constant vibrations are very considerable," greatly favours the mechanical action of this organ. The stomach is "not capable of dissolving the solid parts of animal or vegetable bodies, but only of attenuating them and expressing their fluid parts—hence the reason plainly appears, why the stomach is not dissolved by its own action."

In spite of what has been maintained by many authors, repeated and exact experiments have proved that no acid or alkaline humour is separated in the stomach. "Whatever acid is contained in the stomach, proceeds from the remains of former food; and though it frequently contributes to promote digestion, yet it is by no means absolutely necessary to it." "The aliment thus far digested in the stomach, and expelled into the intestines, receives greater changes from their heat, and pressure, the mixture of the bile, pancreatic juice, and the exhaling and secreted fluids from the vessels and glands." "The bile is the most concocted humour in the body. This natural digestive, which possesses greater real virtues than what the Chymists have assigned to imaginary ferments, and precipitants, chiefly contributes by its saponaceous activity, to attenuate the viscidity of the aliment

and to give to its disunited, various parts the first appearance of chyle, and of an uniform fluid." "The nerves which are distributed to the stomach and intestines are much more numerous, and large, than seem to be necessary for their muscular motion." "It is therefore more than probable that the chyle in its passage through the mesentery, is impregnated with a great quantity of animal spirits; and I shall hereafter more particularly endeavour to show that the nerves terminate in several parts of the body, where they perpetually exhale that animating fluid." This is the first digestion, the excretion of the fæces is its discharge, and on the principles that he has here laid down Barry elaborates the pathology and treatment of various diseases.

About six hours is necessary for the completion of the first digestion, but the chyle thus formed "is still so crude and indigested, and retains so much of the original nature of the aliment," that it must be profoundly altered before it can nourish the tissues of the body. The chyle is admitted to the blood by the subclavian vein, and must all pass through the lungs, which are the principal organs of the second digestion. In this digestion the chyle is changed into serum, which is "the most perfect animal fluid," and is capable of passing through the smallest vessels of the body. The lungs effect this change of chyle into serum by "the compressing force of their vessels," which, "being particularly increased by the weight of the air, contributes to give a greater attenuation, and a more powerful mixture to the fluids than they receive from all the other vessels of the body." "The difference between blood and serum, arises only from a greater union of the globules of serum, for Leuwenhoeck has observed that one globule of blood, when not sufficiently compressed by the action of the vessels, dissolves, and separates into six globules of serum, and these when again united, form one globule of blood; therefore (*cæteris paribus*) the proportion of serum to blood will be reciprocally, as the compressing force of the vessels." The complete change of chyle to serum takes about four hours. A more elaborate description of the function of the lungs is given later on in the book, and to it we shall refer to later. The urine is the chief discharge of the second digestion, and the parts of the chyle which remain after the formation of the serum are changed into urine. "All urine consists of water, oil, salts and earth." "As the urine is immediately separated from the blood, it may, if rightly attended to, in a great measure not only determine the

effects of the second digestion, but the alterations which the blood receives from different diseases." On this basis the action of both diseases and remedies is deduced, and various illustrative cases are given. Thus "a total suppression must unavoidably end in death, always preceded by a sickness in the stomach, vomiting, hickup, convulsive motions and lethargy."

Diabetes, or excessive secretion of urine may result from various causes. "Dr. Mead, with his usual judgment and sagacity, early pointed out the liver as the distant and latent seat of this disease," and the bile "is in some constitutions apt to degenerate into a sweetish faint taste." He then enters into a discussion on diet and regimen, and says, "from the similar structure of the stomach and intestines in human bodies, I think it may be reasonably concluded that an aliment of the vegetable kind was originally designed as most proper for them—but the race of mankind soon degenerated, and to their successive, and more feeble offspring, animals became a necessary part of food. However, a great part of mankind still subsist on a vegetable diet, and have more health, and freedom of spirits, than those of the same constitution, who use too freely an animal food." He discusses at some length the question of putrefaction and the action of antiseptics, and says: "There seems, therefore, to be rather a remarkable analogy between the fermentation of vegetables and the putrifaction of animal fluids, as the effect of this intestine motion in each, is to dissolve the union of their parts, and to produce a new combination of such as did not exist before." The use of salt he considers necessary to those who eat much animal food, as an antiseptic agent, and curiously enough, takes quite a wrong view of the matter, insisting that it is more essential to those who eat animal food than to those who live on vegetables.

The third is the most important digestion, and to it the other two are merely subservient. In this digestion the serum is made fit for nutrition. This change is effected by the heat of the body and the motion in the vessels, and these actions are illustrated by the hatching of an egg. The white or albumen of the egg resembles the serum, and by the heat of the hen the albumen passes from the outer part of the egg to the central part, where it is built up into the chic, and so by the heat of the body the serum is changed and built up into the tissues of the body. "When the healthy serum is so far gradually attenuated, by the action of the vessels on it, as to be capable of entering the de-

creasing series of vessels, the third digestion is finished. But as the three digestions are preparitory to nutrition, I shall endeavour from the nature of these solid vessels, and the known laws of motion, to explain in what manner it is performed." This he then proceeds to do, and divides the period of man's life, from the point of view of nutrition, into three stages. The force of the heart distends the vessels of the young, and so creates a demand for new supplies. These supplies are derived from the fluids, and hence the body grows as long as the force of the heart is greater than the resisting force of the vessels. This is the first stage. When the force of the heart is equal to the resisting force of the vessels, we have the second stage, and the body remains in equilibrium. As old age comes on the vessels gradually become more compact, and so get the better of the force of the heart; attrition also has more effect on the hardened vessels,. and the body enters on senile decay, which is the third stage. "Old age advances in the same proportion; and (if the expression may be allowed) the man grows back again." "Such a one cannot so properly be said to die, as that he ceases to live." Then follow various mathematical calculations to prove that "the more quick the motion of the blood, the sooner will old age advance." Our object should be to obtain "that *Viridis Senectus*, so much wished for, and so seldom obtained; where reason and philosophy, easily subdue any remaining passions, and which closeth at length the last period, like the evening of a Summer's day." He agrees with Hippocrates that this is to be sought for by "a temperate regimen, very moderate exercise, and abstinence from all labours which waste and heat." "Nothing more contributes to promote nutrition than sleep," for then the fluids contain more nourishing parts, and there are fewer abrasions and less attrition. The integrity of the nerve supply is as essential to nutrition as that of the blood supply, for they supply the part with animal spirits. The existence of these animal spirits has been denied, and attempts have been made to explain the action of the nerves in "a more mechanic way," but such explanations he rejects. He looks on the nerves as derived from the last series of vessels in the brain and spinal cord, from these minute arterial branches come the nervous fluid or animal spirits. It is evident "from the structure of the nerves and from their being deprived of their influence, when obstructed by a ligature, or diseases, that the exercise of their functions depends on the motion of a nervous fluid, or

animal spirits through them ; and that they are most unfit for elastic vibrations." " This nervous fluid seems to be formed for more extensive uses than sensation and muscular motion ; and such as could never be answered by solid elastic strings ; for it is more than probable that after it has performed these principal functions, it is absorbed by the lymphatic vessels, and returns into the blood, whose energy, and fluidity is much assisted by it." " These nerves are distributed to every part of the body for animal, and vital functions, as the finest vessels of the arterial system are for nutrition." The nerves are also the principal instruments of the mind, but the union between soul and body, though evident, is " only known to the great Author of Life and Motion." The insensible perspiration is the discharge of the third digestion. Its quantity varies in the opposite direction with the quantity of the urine. In the great cavities of the body there is a perspiration, but there the perspired matter is reabsorbed by the absorbent veins and " by its activity, contributes to animate, and dilute the venous blood, which has been deprived of its finer parts, by previous secretions." It is probable that on the external surface of the body there are similar absorbent veins, which imbibe moisture from the air and from warm baths. Many disorders, both acute and chronic, will arise from a sudden suppression or slow diminution of this discharge. Gout is such a disease, and this he discusses at length.

The last part of the book is devoted to a consideration of the use, structure and diseases of the lungs. He gives a very correct description of external respiration, describing the way the air enters and leaves the thorax much as it is done in modern text-books. The explanation of the rhythmic contraction of the heart is most ingenious. The nerves pass to the heart through the auricles, and when the auricles are empty the ventricles contract, when the auricles are full the ventricles relax. The explanation of this is that when the auricles are empty the nervous fluid can pass unobstructed to the ventricles and so causes them to contract ; but when the auricles fill, they obstruct the passage of this nervous fluid, and so the ventricles become paralytic and relax ; the auricles having now no obstacle empty their blood into the ventricles and allow the nervous fluid to again pass to the ventricles. The blood undergoes great physical change in the lungs, and " the heat, colour, and most material properties of the blood are chiefly owing to the lungs." " Nothing is more sur-

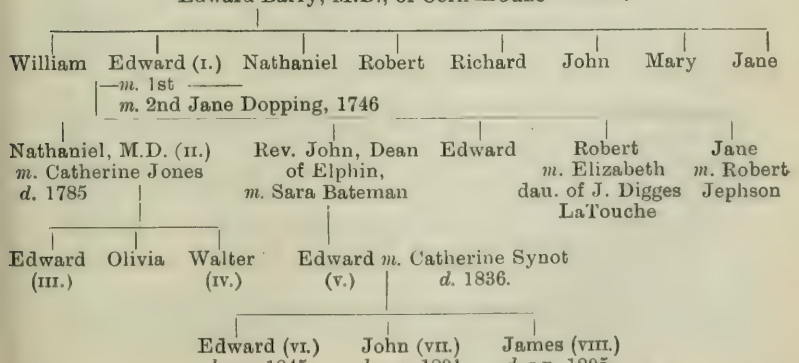
prising, and perhaps more difficult to explain, than the heat of the blood in animal bodies: for the most violent agitation of any other fluid is not capable of exciting so great a force of heat. The following causes, which can never concur in any other fluids, may perhaps be sufficient to produce it. The particular elasticity, and spring of the solids of animal bodies, the conic form of the arteries, their ramifications, the various motions and repercussions arising from hence, must all produce a more exquisite attrition, than any artificial motion can possibly excite. Secondly, the animal spirits in several parts of the body mixing with the blood, which from their elaborate secretion, the surprising activity, and minuteness of their parts, seem to be somewhat analogous to the Rays of Light, or Particles of Fire. Thirdly, the density of the globules increased by being compressed by the action of the vessels, and their spherical form, containing the greatest quantity of matter in the smallest space, makes them capable of retaining their heat the longer. Fourthly, by being oleaginous they are apt to receive and retain a greater degree of heat than other fluids. Fifthly, this attrition is performed in vessels where no other medium, such as the air (or at least only its more subtle parts) can intervene." "The bright purple colour of the blood is chiefly owing to the lungs, but not by admitting nitrous particles with the air, as Lower and others have imagined; for it does not appear that the common gross air is received into the blood, or that nitre can be in any way sufficiently volatilised to be universally mixed with the air, and fit for this purpose. As the pressure of the vessels in the lungs is greater on the circulating fluids than in any other part of the body, the globules that were before separated, or imperfectly joined together, are thereby compressed, and most exactly united; and from thence the colour of the blood returning to the left ventricle, is much more bright and florid than in the right ventricle, before it received the action of the lungs." Later he again returns to this subject, and says: "It seems, therefore, improbable that the common gross air can be admitted into the blood through the lungs (though 'tis beyond doubt, that some of the finer parts enter with the chyle into the lacteals), and the advantage which Borellus assigns to the blood from the intermediate position of the particles of air between the globules of blood, producing an oscillatory, elastic motion may be more justly explained from the particles of fire, which penetrate and enter all bodies, both solid and fluid, which are thereby

rarefied in proportion to the quantity of heat and the different densities of such bodies."

The rest of the book is devoted to a consideration of the diseases of the lungs, of which consumption is much the most important. He recognises three principal causes for this disease:— (1) Obstructions in the lungs, chiefly in the pulmonary vessels, thereby causing tubercles; (2) hæmoptoe; (3) ulcers of the lungs. Tubercles are thus an accident in the course of a consumption, and not an essential cause, and there is no recognition of the unity of the disease in its different manifestations. With regard to contagion he says: "Several authors are of an opinion that a consumption of the lungs is contagious; but have not rightly considered in what particular cases only, and after what manner it may prove so; for it cannot be communicated, but from one in the last stage of a phthisis; neither then is the contagion so sudden as in other diseases; but requires a longer time to exert its malignity, and generally a peculiar pre-disposition in the person who receives it. But when these circumstances concur with sufficient force, it is most certain, from many instances, that the infection may be communicated; neither is the reason of it very obscure, for by frequently lying in the same bed with one in the last stage of that distemper, and particularly by closely inhaling their breath, the lungs may at length be easily tainted; for it is very evident from repeated experiments that the absorbent vessels are capable of conveying a considerable quantity of humours into the blood, especially when sleep and the warmth of the bed, by increasing their relaxation, gives them a greater aptitude to receive them, at the same time in which the phthisical person commonly discharges by sweat, the greatest quantity of the most noxious and acrid humours; and some remarkable cases have been known, where the steams arising from malignant ulcers, or cancers, and immediately inspired into the lungs of another, have in the same manner as arsenical effluvia irritated, obstructed and eroded their tender vessels." The intervention of surgery in the treatment of abscess of the lung and of empyema is strongly advocated, and the cases of several patients are described, on whom operation was undertaken with most excellent results. The book ends with a criticism of the view put forward by Martin concerning the causation of phthisis. "It has been observed that ulcers in the lungs and other parts, when narrowly viewed with microscopes, are covered with several insects; from

whence it has been concluded that they owed their origin to them, and by being inspired with the air fixed their situation on the lungs, eroded and ulcerated them. From the same irregular way of reasoning, these animalcules have been by others supposed the cause of several distempers, and particularly such as are contagious. It is certain that there is an infinite number and variety of such animalcules floating in the air, which will always fix where they can find a safe situation for themselves and their eggs. But every living part of a human body has a perpetual pulsation, which, though imperceptible to our eyes, is sufficiently strong to give an uneasy motion to these very minute animalcules, and to prevent them from fixing themselves for any length of time. But as the inconvenience of this pulsation in a great measure ceases where purulent matter is formed, and as it is viscid and adhesive, they find there not only a more secure nidus, but materials for their nourishment." These animalcules, then, he looks on as the result, and not the cause, of the disease ; he ends the book, however, with the following almost prophetic remark : " This infinite number of animalcules which swarm in the air, and on the surface of the earth, seem to me to be of much greater use and importance than is generally imagined, as all stagnating animal and vegetable humours are quickly taken up by them and receive a new life, and regular circulation ; and perhaps we owe our safety in some measure to this scarcely visible part of the creation, without which the atmosphere would in a short time become highly corrupted, and unfit to continue the life of other animals."

FAMILY OF BARRY.



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NATIONAL UNIVERSITY OF IRELAND.

THE Senate met on Thursday and Friday, November 11 and 12, His Grace the Most Rev. W. J. Walsh, D.D., Archbishop of Dublin, Chancellor of the University, presiding. Sir Christopher Nixon, Bart., M.D., LL.D., was elected the Vice-Chancellor of the University. Sir Christopher Nixon was also elected as the Representative of the University on the General Medical Council. The following resolutions were passed after consideration of a report from the General Board of Studies :—" Resolved : That for the year 1910 the first University examination shall not be obligatory on students in medicine.." " Resolved : That all the courses for the Degrees of the Royal University, including those for Matriculation, be adopted for the examinations of the year 1910, in the form in which they would have been for 1910 if the Royal University had continued to exist, but that the practical examination, Mathematics, Honours, Second University Examination in Arts be discontinued." (N.B.—The courses for Scholarships and Entrance Exhibitions, Studentships, Junior Fellowships, Medical Studentships, Travelling Medical Scholarship, and Browne Gold Medal and Prize do not come within the scope of this resolution.) " Resolved : That up to December 15, 1910, the practice which obtained in the Royal University of Ireland of admitting to Matriculation without further examination candidates who had passed the Senior Grade Intermediate Examination in the subjects of the Matriculation Examination be continued."

SANITARY AND METEOROLOGICAL NOTES.

Vital Statistics.

For four weeks ending Saturday, November 6, 1909.

IRELAND.

The average annual death-rate represented by the deaths—exclusive of deaths of persons admitted into public institutions from without the respective districts—registered in the week ended November 6, 1909, in the Dublin Registration Area and the twenty-one principal provincial Urban Districts of Ireland was 17.4 per 1,000 of their aggregate population, which for the purposes of these returns is estimated at 1,142,308. The deaths registered in each of the four weeks ended Saturday, November 6, and during the whole of that period in the several districts, alphabetically arranged, correspond to the following annual rates per 1,000. In some cases, owing to deaths not having been registered within the week in which they occurred, the rates do not fairly represent the weekly mortality :—

Towns, &c.	Week ending				Average Rate for 4 weeks	Towns, &c.	Week ending				Average Rate for 4 weeks
	Oct. 16	Oct. 23	Oct. 30	Nov. 6			Oct. 16	Oct. 23	Oct. 30	Nov. 6	
22 Town Districts	15.2	14.8	16.4	17.4	16.0	Lisburn -	18.2	18.2	9.1	31.8	19.3
Armagh -	6.9	27.5	13.7	27.5	18.9	Londonderry	14.5	16.9	15.7	15.7	15.7
Ballymena	9.6	14.4	19.2	19.2	15.6	Lurgan -	22.1	22.1	13.3	8.9	16.6
Belfast -	14.0	12.9	15.6	15.6	14.5	Newry -	12.6	4.2	8.4	16.8	10.5
Clonmel -	10.3	10.3	—	5.1	6.4	Newtownards	28.6	23.9	22.9	22.9	24.3
Cork -	21.2	21.2	19.2	22.6	21.0	Portadown -	20.7	5.2	5.2	10.3	10.4
Drogheda -	16.3	4.1	20.4	40.9	20.4	Queenstown	19.8	26.4	6.6	6.6	14.9
Dublin - (Reg. Area)	16.0	15.2	18.6	18.6	17.1	Sligo -	4.8	24.0	14.4	33.6	19.2
Dundalk -	—	—	16.0	27.9	11.0	Tralee -	—	5.3	21.1	10.6	9.3
Galway -	11.7	19.4	3.9	3.9	9.7	Waterford -	15.6	19.5	11.7	7.8	13.7
Kilkenny -	—	19.7	4.9	24.6	12.3	Wexford -	14.0	14.0	14.0	9.3	12.8
Limerick -	23.2	15.0	19.1	13.7	17.7						

The deaths (excluding those of persons admitted into public institutions from without the respective districts) from certain epidemic diseases registered in the 22 districts during the week ended Saturday, November 6, 1909, were equal to an annual rate of 1.0 per 1,000, the rates varying from 0.0 in sixteen of the districts to 14.4 in Sligo, the 7 deaths from all causes for that district including 3 from diarrhœal diseases. Among the 116 deaths from all causes registered in Belfast are 4 from whooping-cough and 4 from diarrhœal diseases. Of the 33 deaths from all causes in Cork 2 are from enteric fever and 2 from diarrhœal diseases, and one of the 10 deaths from all causes registered in Drogheda is from enteric fever.

DUBLIN REGISTRATION AREA.

The Dublin Registration Area consists of the City of Dublin as extended by the Dublin Corporation Act, 1900, together with the Urban Districts of Rathmines, Pembroke, Blackrock, and Kingstown. The population of this area is 398,356, that of the City being 306,902, Rathmines 36,567, Pembroke 28,506, Blackrock 8,759, and Kingstown 17,622.

In the Dublin Registration Area the births registered during the week ended Saturday, November 6, 1909, amounted to 220—119 boys and 101 girls ; and the deaths to 145—85 males and 60 females.

DEATHS.

The deaths registered represent an annual rate of mortality of 19.0 in every 1,000 of the population. Omitting the deaths (numbering 3) of persons admitted into public institutions from localities outside the Area, the rate was 18.6 per 1,000. During the forty-four weeks ending with Saturday, November 6, the death-rate averaged 21.8, and was 2.7 below the mean rate for the corresponding portions of the ten years 1899–1908.

The total deaths (145 in number) included one death from whooping-cough, 2 from diarrhœal diseases, and one death from enteric fever. The deaths of 7 infants under one year of age from enteritis were also registered. Influenza caused one death. In each of the three preceding weeks deaths from whooping-cough had been one, 0, and one ; deaths from enteric fever had been one, 0, and one ; deaths from diarrhœal diseases had been 4, 2, and 3 ; and deaths from influenza had been 3, 0, and 0.

There were 2 deaths from broncho-pneumonia, and there were 6 deaths from *pneumonia* (not defined).

The deaths (26) from all forms of tuberculous disease include 19 from tubercular phthisis (*phthisis*), 3 from tubercular meningitis, and 4 deaths from other forms of the disease. Deaths from all forms of tuberculous disease in the three preceding weeks had been 15, 29, and 36 respectively.

There were 5 deaths from carcinoma and 5 from cancer, malignant disease (undefined).

Premature birth was the registered cause of death of 2 infants.

Of 11 deaths attributed to diseases of the brain and nervous system, 2 were those of infants under one year of age from *convulsions*.

Diseases of the heart and blood-vessels caused 19 deaths, and bronchitis caused 13 deaths.

The 2 accidental deaths were attributed to burns.

There was one death caused by hæmorrhage from wound in the throat suicidally inflicted with a razor.

In four instances the cause of death was "uncertified," there having been no medical attendant during the last illness. These cases include the deaths of 2 infants under one year of age, and the deaths of 2 persons aged 60 years and upwards.

Forty of the persons whose deaths were registered during the week were under 5 years of age (27 being infants under one year, of whom 11 were under one month old) and 41 were aged 60 years and upwards, including 20 persons aged 70 and upwards, of whom 8 were octogenarians.

The Registrar-General points out that the names of the cause of death printed above in italics should be avoided whenever possible in Medical Certificates of the Cause of Death.

STATE OF INFECTIOUS DISEASE IN THE DUBLIN REGISTRATION AREA AND IN BELFAST.

The usual returns of the number of cases of infectious diseases notified under the "Infectious Diseases (Notification) Act, 1889," and the "Tuberculosis Prevention (Ireland) Act, 1908," as set forth in the following table, have been furnished by Sir Charles A. Cameron, C.B., M.D., Medical Superintendent Officer of Health for the City of Dublin; Mr. Fawcett, Executive Sanitary Officer for Rathmines and Rathgar Urban District; Mr. Manly, Executive Sanitary Officer for Pembroke Urban District; Mr. Heron,

Executive Sanitary Officer for Blackrock Urban District; Dr. R. A. O'Donovan, Medical Superintendent Officer of Health for Kingstown Urban District; and Dr. Bailie, Medical Superintendent Officer of Health for the City of Belfast.

TABLE SHOWING THE NUMBER OF CASES OF INFECTIOUS DISEASES notified in the Dublin Registration Area (viz.—the City of Dublin and the Urban Districts of Rathmines and Rathgar, Pembroke, Blackrock, and Kingstown), and in the City of Belfast, during the week ended November 6, 1909, and during each of the preceding three weeks. An asterisk (*) denotes that the disease in question is not notifiable in the District.

CITIES AND URBAN DISTRICTS	Week ending	Small-pox	Measles	Rubella, or Epidemic Rose Rash	Scarlet Fever	Typhus	Relapsing Fever	Diphtheria	Membranous Croup	Pyrexia (origin uncertain) *a*	Enteric or Typhoid Fever	Erysipelas	Puerperal Fever	Whooping-cough	Cerebro-spinal Fever	Tubercular Phthisis (*Phthisis*).	Total
City of Dublin	Oct. 16	-	o	o	20	2	-	6	-	-	6	13	-	*	-	10	87
	Oct. 23	-	o	o	11	-	-	5	-	1	9	16	-	*	-	11	83
	Oct. 30	-	o	*	16	-	-	12	-	1	10	6	-	*	-	18	63
	Nov. 6	-	o	*	17	-	-	8	-	-	2	14	-	o	-	26	67
Rathmines and Rathgar Urban District	Oct. 16	-	o	*	2	-	-	2	-	-	-	-	-	o	*	o	4
	Oct. 23	-	*	*	3	-	-	1	-	-	-	-	-	*	o	*	4
	Oct. 30	-	o	*	4	-	-	1	-	-	-	-	-	*	*	*	5*b*
	Nov. 6	-	o	*	4	-	-	1	-	-	1	1	-	o	*	*	7*b*
Pembroke Urban District	Oct. 16	-	-	-	2	-	-	-	-	-	1	1	-	-	-	*	4
	Oct. 23	-	-	-	3	-	-	2	-	-	2	-	-	-	-	*	7
	Oct. 30	-	-	-	-	-	-	1	-	-	-	1	-	-	-	*	2
	Nov. 6	-	-	-	6	-	-	-	-	-	-	-	-	2	-	*	8
Blackrock Urban District	Oct. 16	-	o	o	-	-	-	-	-	-	-	-	-	*	-	*	-
	Oct. 23	-	o	*	-	-	-	-	-	-	-	-	-	*	-	*	-
	Oct. 30	-	o	o	-	-	-	-	-	-	-	-	-	o	-	*	-
	Nov. 6	-	*	o	-	-	-	-	-	-	-	-	-	*	-	*	-
Kingstown Urban District	Oct. 16	-	*	*	-	-	-	-	-	-	-	-	-	*	-	*	-
	Oct. 23	-	*	*	-	-	-	-	-	-	1	-	-	*	o	*	1
	Oct. 30	-	*	*	-	-	-	-	-	-	-	-	-	*	o	*	-
	Nov. 6	-	*	*	-	-	-	-	-	-	-	-	-	*	o	o	-
City of Belfast	Oct. 16	-	o	*	12	-	-	3	-	2	1	7	1	*	-	*	26
	Oct. 23	-	*	*	23	-	-	2	-	-	1	6	1	*	-	*	33
	Oct. 30	-	*	o	12	-	-	-	-	1	1	8	-	*	-	o	22
	Nov. 6	-	o	o	6	-	-	6	-	2	6	6	-	*	-	35*c*	26

a *Continued Fever.*

b Not including one case of choleraic diarrhœa as returned.
c From 2nd November, 1909.

CASES OF INFECTIOUS DISEASES UNDER TREATMENT IN DUBLIN HOSPITALS.

During the week ended November 6, 1909, one case of measles was admitted to hospital, one was discharged, and 8 cases remained under treatment at its close.

Twenty-six cases of scarlet fever were admitted to hospital, 9 were discharged, and 100 cases remained under treatment at the close of the week. This number is exclusive of 21 convalescents from the disease under treatment in Beneavin, Glasnevin, the Convalescent Home of Cork Street Fever Hospital.

There was one case of typhus admitted to hospital during the week, 3 were discharged, and 5 cases remained under treatment in hospital at the end of the week.

Fourteen cases of diphtheria were admitted to hospital, 9 were discharged, and 49 patients remained under treatment at the close of the week.

Ten cases of enteric fever were admitted to hospital, 7 were discharged, there were 2 deaths, and 56 cases remained under treatment in hospital at the close of the week.

In addition to the above-named diseases, 15 cases of pneumonia were admitted to hospital, 3 were discharged, there were 3 deaths, and 28 cases remained under treatment at the end of the week.

ENGLAND AND SCOTLAND.

The mortality in the week ended Saturday, November 6, in 76 large English towns, including London (in which the rate was 13.4), was equal to an average annual death-rate of 13.3 per 1,000 persons living. The average rate for 8 principal towns of Scotland was 15.3 per 1,000, the rate for Glasgow being 18.2 and for Edinburgh 12.5.

INFECTIOUS DISEASE IN EDINBURGH.

The Registrar-General has been favoured by A. Maxwell Williamson, M.D., B.Sc., Medical Officer of Health for Edinburgh, with a copy of his Return of Infectious Diseases notified during the week ended November 6. From this report it appears that of a total of 86 cases notified, 59 were of scarlet fever, 12 of phthisis, 9 of diphtheria, and 6 of erysipelas.

Among the 453 cases of infectious diseases in hospital at the close of the week were 275 cases of scarlet fever, 61 of measles, 40 of phthisis, 15 of whooping-cough, 36 of diphtheria, 9 of enteric fever, 11 of erysipelas, one of cerebro-spinal fever, and one of chicken-pox.

METEOROLOGY.

Abstract of Observations made in the City of Dublin, Lat. 53° 20′ *N., Long.* 6° 15′ *W., for the Month of October*, 1909.

Mean Height of Barometer, - - -	29.688 inches.
Maximal Height of Barometer (31st, at 9 p.m.),	30.304 ,,
Minimal Height of Barometer (5th, at 8 40 a.m.),	29.062 ,,
Mean Dry-bulb Temperature, - -	50.2°.
Mean Wet-bulb Temperature, - -	47.8°.
Mean Dew-point Temperature, - -	45.3°.
Mean Elastic Force (Tension) of Aqueous Vapour,	.313 inches.
Mean Humidity, - - -	83.9 per cent.
Highest temperature in Shade (on 3rd), -	66.7°.
Lowest Temperature in Shade (on 30th), -	30.0°.
Lowest Temperature on Grass (Radiation) (30th),	24.0°.
Mean Amount of Cloud, - - -	52.9 per cent.
Rainfall (on 24 days), - - -	2.613 inches.
Greatest Daily Rainfall (on 23rd), - -	.494 inch.
General Directions of Wind, - - -	S.W., W.

Remarks.

A warm, rainy or showery, squally month up to the 24th, thence to the close cold, with scanty rainfall in Ireland, and sharp night frosts from the 28th. The mean temperature in Dublin of the three weeks ended the 23rd was 54.2°; that of the following fourth week ended the 30th was 41.8.° Had it not been for this premature "cold-snap" October, 1909, would have approached October, 1908, in mildness. Until the 16th atmospheric pressure was lowest—often very low—in the Iceland region, and steep baric gradients for S.W. winds extended thence to the British Islands and France. In this way high temperatures, squally S.W. winds, and frequent rain came to prevail along the eastern shores of the Atlantic. After the 16th the centres of the Atlantic depressions came nearer to our shores, and on the 26th a cyclonic system passed south-eastwards from Kerry to Brittany, subsequently north-eastwards to the Netherlands, and finally northwards to Norway. This system caused a fresh or strong easterly gale on the east coast of Ireland, followed by cold and sharp frost in this country. In England and along the shores of the English Channel rain fell in immense quantities—the

measurement at Broadstairs in the week ended on Saturday the 30th being no less than 6.03 inches, of which amount 5.79 inches fell on 3 days.

In Dublin the arithmetical mean temperature (51.3°) was above the average (49.5°); the mean dry-bulb readings at 9 a.m. and 9 p.m. were 50.2°. In the forty-five years ending with 1909, October was coldest in 1892 (M. T. = 44.8°) and in 1896 (M. T. = 45.0°). It was warmest in 1908 (M. T. = 55.4°) and in 1876 (M. T. = 53.1°).

The mean height of the barometer was 29.688 inches, or 0.152 inch below the corrected average value for October—namely, 29.840 inches. The mercury rose to 30.304 inches at 9 p.m. of the 31st, and fell to 29.062 inches at 8 40 a.m. of the 5th. The observed range of atmospheric pressure was, therefore, 1.242 inches.

The mean temperature deduced from daily readings of the dry-bulb thermometer at 9 a.m. and 9 p.m. was 50.2°, or 2.8° below the value for September, 1909. The arithmetical mean of the maximal and minimal readings was 51.3°, compared with a thirty-five years' (1871–1905) average of 49.5°. Using the formula, *Mean Temp.* = *Min.* + (*Max.* — *Min.* × .485), the mean temperature was 51.1°, or 1.8° above the average mean temperature for October, calculated in the same way, in thirty-five years, 1871–1905, inclusive (49.3°). On the 3rd the thermometer in the screen rose to 66.7°—wind, S.W.; on the 30th the temperature fell to 30.0°—wind, W. The minimum on the grass was 24.0°, also on the 30th.

The rainfall was 2.613 inches, distributed over 24 days. The rainfall was below, while the rainy days were above, the average. The average rainfall for October in the thirty-five years, 1871–1905, inclusive, was 2.870 inches, and the average number of rainy days was 18. In 1880 the rainfall in October was very large—7.358 inches on 15 days. In 1875, also, 7.049 inches fell on 26 days. On the other hand, in 1904 only .454 inch fell on 11 days, in 1890 only .639 inch fell on but 11 days; in 1884, only .834 inch on but 14 days; and in 1868 only .856 inch on 15 days.

High winds were noted on 15 days, and attained the force of a gale on 3 days—the 14th, 22nd, and 26th. The atmosphere was foggy in Dublin on the 1st. There was a solar halo on the 15th, and lunar halos were seen on the 25th and 27th. Lightning occurred on the 12th, 13th, 23rd, and 29th. Hail fell on the

21st, 24th, and 30th. The aurora borealis was seen on the 18th and 20th.

The rainfall in Dublin during the ten months ending October 31st, 1909, amounted to 21.106 inches on 158 days, compared with 12.366 inches on 123 days during the same period in 1887 (the dry year), 20.466 inches on 145 days in 1901, 24.481 inches on 172 days in 1902, 27.882 inches on 196 days in 1903, 19.601 inches on 163 days in 1904, 20.462 inches on 161 days in 1905, 19.439 inches on 168 days in 1906, 22.261 inches on 182 days in 1907, 20.776 inches on 167 days in 1908, and a thirty-five years' (1871–1905) average of 23.030 inches on 164 days.

Mr. William J. Good reports that at the Normal Climatological Station in Trinity College, Dublin, the mean height of the barometer was 29.692 inches, the range of atmospheric pressure being from 29.064 inches at 9 a.m. of the 5th to 30.300 inches at 9 p.m. of the 31st. The mean value of the readings of the dry-bulb thermometer at 9 a.m. and 9 p.m. was 51.1°. The arithmetical mean of the daily maximal and minimal temperatures was 51.7°. The screened thermometers rose to 68.0° on the 3rd, and fell to 29.6° on the 30th. On this latter date the grass minimum was 18.1°. Rain fell on 23 days to the amount of 2.470 inches, the greatest fall in 24 hours being .500 inch on the 23rd. The duration of bright sunshine, according to the Campbell-Stokes recorder, was 101.8 hours, of which 7.3 hours occurred on the 6th. The mean daily sunshine was 3.3 hours. The mean temperature of the soil at 9 a.m. at a depth of one foot was 52.2°; at a depth of 4 feet it was 54.0°.

At Cloneevin, Killiney, Co. Dublin, Mr. Robert O'B. Furlong, C.B., returns the rainfall in October at 3.00 inches on 21 days, compared with 2.76 inches on 20 days in 1902, 3.82 inches on 26 days in 1903, only .29 inch on 12 days in 1904, 1.01 inches on 14 days in 1905, 3.43 inches on 24 days in 1906, 4.98 inches on 28 days in 1907, 2.30 inches on 15 days in 1908, and a twenty-four years' average (1885–1908) of 2.985 inches on 17.2 days. On the 10th .46 inch fell. Since January 1, 1909, 19.79 inches of rain have fallen at this station on 144 days. A slight fall of snow occurred at 8 a.m. of the 31st.

Mr. T. Bateman reports that the rainfall at The Green, Malahide,

Co. Dublin, was 3.06 inches on 22 days, the greatest fall in 24 hours being .515 inch on the 19th. The mean shade temperature was 48.2°, the extremes being—highest, 64.5° on the 2nd; lowest, 24.5° on the 30th.

Dr. Arthur S. Goff reports that at Lynton, Dundrum, Co. Dublin, rain fell on 25 days to the amount of 3.02 inches, compared with 2.40 inches on 21 days in 1901, 3.45 inches on 24 days in 1902, 3.38 inches on 26 days in 1903, .42 inch on 9 days in 1904, 1.54 inches on 15 days in 1905, 4.52 inches on 24 days in 1906, 5.40 inches on 30 days in 1907, and 1.77 inches on 15 days in 1908. The greatest measurement in 24 hours was .68 inch on the 22nd. Hail showers fell on the 30th. The mean temperature in the shade was 51.6°, the range being from 66° on the 3rd to 32° on the 29th, 30th and 31st. The mean temperature of October was 50.0° in 1901, 50.9° in 1902, 50.8° in 1903, 51.6° in 1904, 47.1° in 1905, 50.7° in 1906, 49.9° in 1907, and 55.0° in 1908.

Dr. Christopher Joynt, F.R.C.P.I., registered 2.720 inches of rain on 23 days at 21 Leeson Park, Dublin, the largest measurement in 24 hours being .490 inch on the 23rd.

Mr. A. Victor Price recorded 5.19 inches of rain on 22 days at Clonsilla, Greystones, Co. Wicklow, the greatest rainfall in 24 hours being .70 inch on the 17th. Since January 1, the measurement at this station has been 23.37 inches on 138 days. The mean temperature for October was 49.5°. The shade thermometer rose to 68° on the 2nd and fell to 29° on the 29th.

At Knockdolian, Greystones, Co. Wicklow, Mr. R. Cathcart Dobbs, J.P., measured 4.628 inches of rain on 22 days, the maximal fall in 24 hours being .833 inch on the 17th. Other heavy daily falls were .650 inch on the 12th and again on the 22nd. From January 1 to October 31, 1909, the rainfall at Knockdolian amounted to 24.824 inches on 131 days.

Dr. L. T. Burra reports that 5.950 inches of rain fell on 25 days at the Royal National Hospital for Consumption for Ireland, near Newcastle, Co. Wicklow. The maximum in 24 hours was .820 inch on the 17th. The mean temperature of the month at the Hospital was 50.1°, the extreme readings of the shade thermometer being—highest, 67.8° on the 4th; lowest, 31.0° on the 30th.

Mr. William Miller states that in the City of Cork there were 24 days with rain during the month—total fall, 5.72 inches, which

was 2.42 inches over the average. The greatest day's rain was that of the 10th—.65 inch. The rainfall of the past ten months was 25.69 inches, which was 4.40 inches short of the average for the same period. The rainfall of October in Cork exceeded that of the four previous months taken together by .83 inch.

The Rev. Arthur Wilson, M.A., recorded a rainfall of 10.74 inches on 26 days at the Rectory, Dunmanway, Co. Cork. This was the heaviest fall of any month in the last 5 years except December, 1907, when 11.80 inches were recorded. The heaviest falls in 24 hours were 1.70 inches on the 19th, 1.23 inches on the 25th, and .90 inch on the 6th. The rainfall for the first 10 months of 1909 is 38.67 inches, compared with 43.18 inches in 1905, 43.29 inches in 1906, 42.31 inches in 1907, and 41.63 inches in 1908. Thunder and lightning occurred on the 12th and 20th.

Mr. William Holbrow reports a rainfall of 10.96 inches at Derreen, Kenmare, Co. Kerry, the heaviest falls in 24 hours being 1.36 inches on the 10th, 1.23 inches on the 19th, and 1.12 inches on the 25th. At Derreen only .64 inch of rain was measured in August, and only .46 inch in September, so that the rainfall of October was about ten times as great as that of the two previous months taken together.

At the Ordnance Survey Office, Phœnix Park, Dublin, the October rainfall was 3.260 inches on 25 days. The heaviest fall in 24 hours was .650 inch on the 23rd. The total amount of bright sunshine was 120.2 hours, the daily maximal duration being 8.6 hours on the 6th.

At the Royal Botanic Gardens, Glasnevin, rain fell on 24 days to the amount of 3.07 inches, the greatest daily fall being .68 inch on the 23rd.

"A COMPARISON OF THE DRUG WITH ITS ALKALOIDS."

THE October number of *Folia Therapeutica* contains an article with this title from the pen of Sir Samuel Wilks, Bart. To physicians of the past generation the worthy Baronet's view on the advantages of trustworthy preparations of the crude drugs over solutions of alkaloids are well known. Withal we are glad to see them restated; for we think the great accuracy with which the dose of an alkaloid can be measured does not fully compensate for the diminished therapeutic action which follows from the separation of the principal ingredient from its organic combination.

PERISCOPE.

LITERARY NOTE.

Messrs. J. & A. Churchill, the well-known medical publishers, have published an illustrated catalogue of the medical books they publish. It is well printed and neatly got out, and will be found helpful to both specialists and general practitioners in the selection of text-books and monographs.

DYSMENORRHŒA CAUSED BY TUBERCULOSIS.

M. Gaston Cotte (*Gazette des Hôpitaux*, October 12th, 1909) found that of 70 women suffering from dysmenorrhœa, 53 of whom submitted to serum therapy, the results were as follow :— Eight derived no benefit from the treatment, 5 considered the pains were not quite so bad, and 40 were completely cured. Their changes were afterwards unattended by pain, and were normal both in quantity and duration. In cases of dysmenorrhœa dating from puberty, he found in 22 cases that 3 were somewhat improved, 3 declared that the pains were not so severe, and 16 were completely cured. He believes with M. Poncet that dysmenorrhœic pains are genital manifestations of general tuberculosis.

THE LATE SIR WILLIAM THOMSON, C.B.

With poignant regret we chronicle the lamented death on Saturday, November 13, 1909, of this distinguished and highly esteemed member of the Medical Profession. Irish Surgery has thereby lost one of its brightest ornaments. We hope to publish a memoir of Sir William Thomson in the number of this Journal for January, 1910.

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